













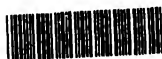
# AGRICULTURAL COMMERCE

THE ORGANIZATION OF AMERICAN COMMERCE  
IN AGRICULTURAL COMMODITIES

BY

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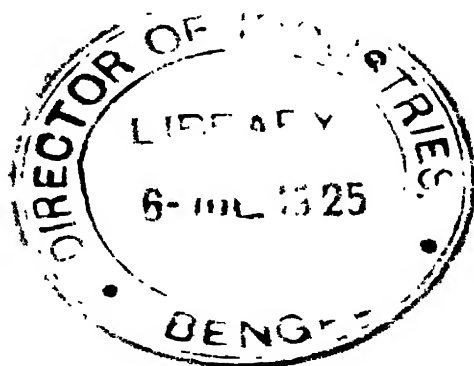
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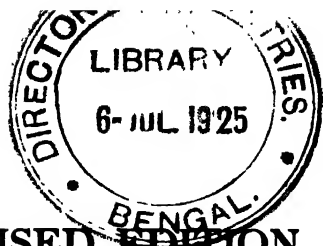
**D. APPLETON AND COMPANY**

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**TO MY WIFE**  
**IN APPRECIATION OF HER**  
**ASSISTANCE IN THE PREP-**  
**ARATION OF THIS VOLUME**







## PREFACE TO REVISED EDITION

The purpose of this volume is to describe the commerce of the United States in agricultural products, special attention being given to those phases of trade organization which have to do with the distribution of farm commodities from producer to consumer. Its scope is more fully outlined in Chapter I. It is especially designed to serve as a textbook for colleges and universities, much of the information contained in it having been compiled for use in a course dealing with the business methods and organization of American commerce, which the author has conducted at the University of Pennsylvania since 1908.

An effort has been made to revise thoroughly the original text which was published in 1915. Many of the fundamentals principles and facts concerning the commerce of the United States in agricultural products have remained substantially as they were but the developments in marketing methods, trade organization, commercial practices, prices and legislation occurring in recent years made revision essential. New sections were inserted in most of the chapters originally included, so as to embody the more important recent developments and make them more comprehensive. Several new chapters have also been added. It was thought desirable to include chapters dealing with grain prices and grain exporting, the trade in dairy products, and cooperative marketing of farm products.

The original plan of the text is retained because it is believed to be sound from the standpoint of teaching method. The commerce in farm products may be described in part by discussing commercial functions in general, but the various agricultural trades differ in so many respects that description of the trade in separate commodities is desirable for the purpose of emphasizing how the essential functions of commerce are variously performed under different conditions and how the



principal agricultural products are distributed. In addition to the various chapters treating agricultural commerce on functional lines it is believed to be helpful to the reader to include chapters dealing separately with the trade in important and representative groups of farm products. Those selected for description on the commodity basis are the grains, cotton, live-stock, wool, leaf tobacco, the various dairy products and the fruits. The methods of distribution discussed in connection with the fruit industry, moreover, apply in the fresh vegetable and produce trades. The chapters describing trade functions in general include the scope and definition of agricultural commerce, classification of markets and marketing methods, organized speculation, coöperative marketing, inspection and grading, the financing of crop movements, the insurance of agricultural products, the collection and dissemination of crop and market reports, agricultural prices and price factors, and foreign markets and market influences.

I desire to acknowledge with many thanks my obligations to the various state and federal government officials and officials of grain, cotton, live-stock and other exchanges, elevator, insurance, grain dealing and other business concerns which have courteously provided me with forms and other information.

The index was prepared by Mr. W. J. McComb, Instructor in Transportation and Commerce, University of Pennsylvania.

G. G. H.

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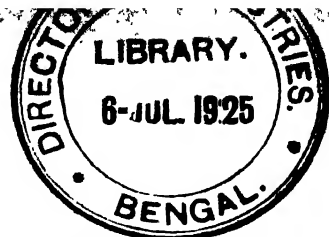


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# **AGRICULTURAL COMMERCE**





# AGRICULTURAL COMMERCE

## CHAPTER I

### INTRODUCTION: DEFINITIONS AND SCOPE

**Production and Distribution Distinguished.**—In agriculture as in other industries production and commercial distribution, although closely interrelated, are essentially distinct processes. The former has reference to the growth of the country's farm products; the latter to their sale and distribution from the grower to the consumer. So clearly has this distinction been maintained in the farming industries that for many years the term "agriculture," in the absence of specific definition, was generally synonymous with agricultural "production." Gradually, however, it is being realized that agriculture depends as much upon the successful commercial distribution of the crops as upon their successful production. Indeed, the former may be regarded as an essential part of production. Many growers confine their activities largely to the production of farm products; others, in addition, pay much attention to the marketing of their crops; and there are many dealers, transportation agencies, warehousemen, and other trade interests engaged in the distribution of farm commodities, whose activities are purely commercial. No matter by whom these services are performed, the production and the distribution of farm products are separate processes and both are of unquestioned importance.

In discussing the commerce in farm products, it is not necessary to deal with soils, seed selection, planting, cultivation, fertilizers, crop rotation, farm labor, production costs, crop pests and animal diseases, harvesting methods, feeding, live-stock breeding, farm machinery, land rents and similar phases of agriculture; for such matters constitute agricultural

production. They need to be mentioned only in so far as they exert an indirect influence upon agricultural prices. Subsequent chapters will be confined exclusively to the commercial phases of agriculture.

**Commerce Defined.**—Various terms are almost indiscriminately applied to the distribution of products from producer to consumer. Some refer to it as “commercial distribution,” some prefer “marketing,” and others “commerce.” Any of these terms readily lends itself to the following concise definition of commerce: “Commerce consists of the exchange of commodities between separated localities—it is the agency by means of which consumer and producer are brought together. The process involves the sale and purchase of goods, their transmission from the seller to the buyer, and the settlement of business accounts.”<sup>1</sup> Whatever term is preferred in describing the commercial phases of agriculture, it is essential to interpret its meaning broadly so as to exclude all those which are primarily related to the production or growth of farm products and to include all those which have to do with their distribution from grower to consumer.

**Study of Commerce in Agricultural Products Subdivided.**—In order to facilitate discussion the study of the commerce in farm products may be subdivided as follows:

1. The geographical location of producing districts, including a statement of the volume and value of crops produced and the proportion reaching the country's markets.

2. The location and classification of different types of agricultural markets, competition within and between markets, and market conditions or influences.

3. The trade organization or methods of purchase and sale, including a description of (a) the various kinds or groups of buyers and sellers, (b) their methods of buying and selling, (c) the organization and functions of exchanges, (d) the uses and workings of warehouses, elevators, yards or market-places where farm products may be stored or marketed, and (e) coöperative trade activities of growers.

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<sup>1</sup> E. R. Johnson, *American Railway Transportation*, p. 4.

4. The transportation or shipping organization, including the hauling of farm products from farm to local market or shipping point, and their transportation from local points to more distant domestic and foreign markets, over rail and water transportation routes.

5. The inspection, classification and grading of farm products.

6. The control or regulation of commercial distribution by public authorities and by organized exchanges, boards of trade or other commercial bodies.

7. The relationship between speculation and the trade in farm commodities.

8. The collection and dissemination of crop and market information.

9. Local wholesale and retail agricultural prices, price factors or influences, and methods of determining and quoting prices.

10. The cost incurred in the commercial distribution of agricultural crops.

11. The relationship between insurance and the commerce in farm commodities.

12. The financing of the agricultural crops.

The transportation or shipping service mentioned above is one of the most important parts of the entire machinery of commerce as a whole, but as it has been described elsewhere in great detail,<sup>2</sup> it is not intended to discuss in this volume the methods of making freight rates, general transportation services, or transportation as an industry. It is essential, however, to include various phases of transportation, such as the relation of freight charges to marketing costs, trade profits, and prices; rail and water routes for particular crops; in-transit, reconsign-

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<sup>2</sup> See especially E. R. Johnson and G. G. Huebner, *Railroad Traffic and Rates* (1911); *Principles of Ocean Transportation* (1918); W. Z. Ripley, *Railroad Rates and Regulation* (1912); Johnson and Van Metre, *Principles of Railroad Transportation* (1921); W. A. Trimpe, *Freight Claims* (1913); J. F. Morton, *Routing Freight Shipments* (1913); House Committee on the Merchant Marine and Fisheries, *Steamship Agreements and Affiliations*, Vol. IV (1914); G. G. Huebner, *Ocean Steamship Traffic Management* (1920); Fifty-two Traffic Lessons, in the *Traffic World*, Jan., 1922, to Dec., 1923; Vanderblue and Burgess, *Railroads, Rates, Service, Management* (1923); Joint Commission of Agricultural Inquiry, *Transportation*, Part III (1922).

ment or diversion privileges; specialized equipment; various special transportation services and practices; and the costs of hauling the crop from the farms to local markets or shipping points.

**Plan of Treatment.**—A certain degree of uniformity prevails throughout the commercial distribution of the various crops, thus facilitating the general description of many of the above-mentioned subdivisions. In some respects, however, there is such wide divergence in practice that the detailed study of commerce in selected commodities becomes essential. Various phases of commercial distribution are discussed in subsequent chapters, for the agricultural crops as a whole, while at the same time special chapters contain descriptions of the commerce in the cereals and in cotton, live stock, wool, leaf tobacco, dairy products and fruit. These particular crops were selected because of their great volume and because they are of special importance from the standpoint of trade methods or commercial organization.

The country's crops of hay and forage likewise have a huge money value, but they are less typical of agricultural trade methods because a large proportion of these groups is retained for consumption on the farms, a smaller share reaches the great wholesale markets for systematic organized distribution, and the huge local trade in them does not require detailed description. Vegetables are also an agricultural crop of vast importance, but the manner in which the commerce in most of them is conducted is so like that which prevails in the fruit trade that separate description of both is scarcely warranted in a volume of limited space.\* Dressed meat and meat products produced on the farms, as distinguished from live stock, require but brief mention, for most of them are either consumed on the farms or are sold in nearby markets for local consumption.

**General Classification of Agricultural Crops.**—Although the commerce in farm products is directly concerned only with those which actually reach the agricultural markets, it is indirectly concerned with the total crops annually produced. The entire

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\* *The Marketing of Fruit*, Chap. XI.

volume of the country's crops cannot be stated in a single aggregate because they comprise a wide variety of products which are not measured by a common unit or standard. It is also difficult to estimate accurately their entire net value. So much grain, for example, is fed to live stock and poultry that an addition of the values of grains, live stock on farms, country dairy products and eggs would result in a gross value containing flagrant duplication. The United States Census Office in its latest report has attempted no statement of an aggregate net volume or value, but confined its returns to a separate description of three leading groups of farm products. A brief review of the latest census returns will serve as a general measure of the vastness of the agricultural trades.

Official statistics showing the value and volume of most of the country's crops are available for later years and many are presented in subsequent chapters.<sup>4</sup>

The Department of Agriculture, moreover, publishes estimates of the gross value of all farm products. They are not strictly comparable with the census returns but serve as an additional index to the magnitude of the agricultural industries and the extent to which the value of their output has fluctuated in recent years (*see* Diagram No. 1).

Much the greater part of the fluctuations was due to the abrupt price changes described in later chapters.<sup>5</sup>

1. *The Primary Crops.*—The term "crops" as used in the census returns includes only the cereals, hay and forage, cotton, leaf tobacco, vegetables, fruits and other commodities included in Table No. I. These products are often referred to as the "primary crops," because they are fundamental and constitute the basis for most of the remaining farm products. The value of all the primary crops of the United States in the census year 1919 was reported to be \$14,755,365,000. Their

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<sup>4</sup> See U. S. Department of Agriculture, *Year Books* (1910-1922): U. S. Bureau of Agricultural Economics, Division of Crop Estimates, *Farmers' Bulletins* Nos. 570, 575, 584, 629, 651, 665; also *Weather, Crops and Markets*; U. S. Census Office *Bulletins* Nos. 125, 128; Report on Agriculture, 1919 and 1920, Vol. V.

Fourteenth U. S. Census, Agriculture, Vol. V, pp. 700-703.

<sup>5</sup> See Chap. XX for price index numbers.



total value was 182 per cent in excess of what it had been a decade earlier, but this was due mainly to an increase in prices.

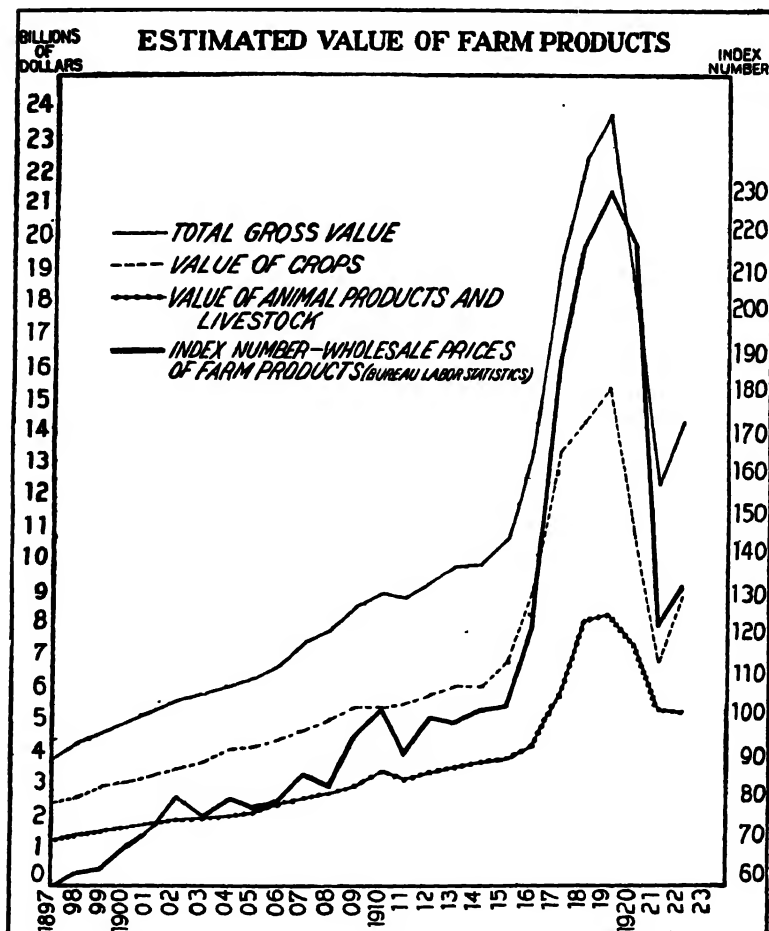


DIAGRAM I.—TOTAL VALUE OF FARM PRODUCTS  
GROWN IN THE UNITED STATES.

On the basis of the prices which ruled in 1909 the value of these crops in 1919 would have been but 9 per cent higher than it

TABLE I  
TOTAL VALUE OF PRIMARY AGRICULTURAL CROPS:

Crop	1909	1919	Per Cent Increase	Per Cent Increase Due to Greater Production
All crops.....	\$5,231,850,683	\$14,755,364,894	182.0	9.0
Cereals.....	2,665,539,714	6,941,257,254	160.4	7.9
Other grains and seeds.....	97,507,891	272,909,513	179.8	0.9 <sup>a</sup>
Hay and forage.....	826,401,175 <sup>4</sup>	2,523,050,224	180.3 <sup>4</sup>	19.6
Vegetables.....	418,110,154	1,302,199,688	211.4	<sup>1</sup>
Sugar crops.....	59,252,644	162,439,060	174.1	0.5 <sup>a</sup>
Tobacco leaf.....	104,302,856	444,047,481	325.7	30.0
Cotton and cotton seed.....	824,696,287	2,355,169,365	185.6	5.8
Sundry minor crops.....	14,015,746	21,293,326	51.2	12.3 <sup>a</sup>
Fruits and nuts.....	222,024,216	732,998,983	230.0	14.9

<sup>1</sup> Fourteenth U. S. Census (1920), Agriculture, Vol. V p. 700, 701.

<sup>a</sup> Decrease.

<sup>3</sup> Not reported for all vegetables.

<sup>4</sup> Not including corn cut for forage.

was a decade earlier, and this represents the real advance in primary crop production. A large proportion of many of these crops enters the commerce of the United States, not directly, but indirectly in the form of cattle, sheep, hogs, horses, and other farm animals; and poultry, eggs, country butter, milk, cream, and other country dairy products. A portion is also retained locally for final consumption and for seed. In 1914, for example, 39.3 per cent of the wheat crop was not shipped out of the counties in which it was grown and similar proportions for other leading primary crops were as follows: corn 81.4 per cent, oats 80.6 per cent, and barley 54.9 per cent. Corn, oats, barley and hay are commonly known as the "feed crops" and the United States Bureau of Crop Estimates has stated that during the five years ending in 1914, 85.6, 72, 47 and 83 per cent respectively were used on farms for food and seed purposes.<sup>6</sup> In the case of some primary crops, however, such as cotton and leaf tobacco, but little is retained locally, the amount entering the channel of commerce being almost equal to the total crop produced.

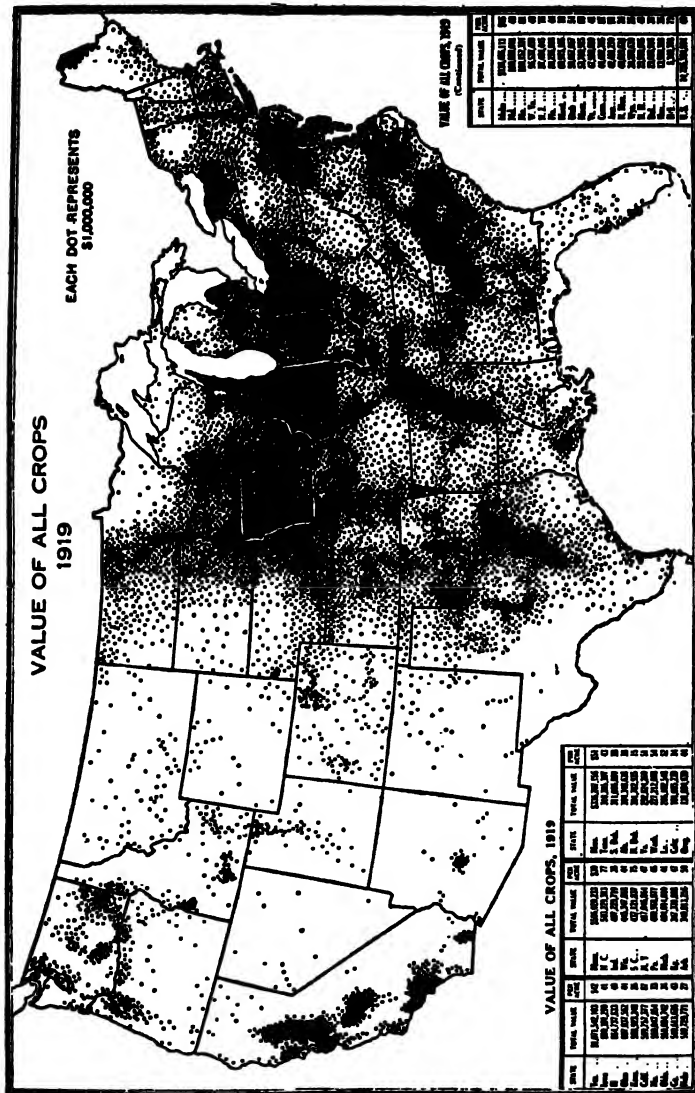
The value of the primary crops in different parts of the United States is graphically shown in Map No. I. A comprehensive statistical compilation by the United States Department of Agriculture shows a decline in the farm value of the principal crops from \$15,423,000,000 in 1920 to \$6,934,000,000 in 1921, followed by an advance to \$8,961,000,000 in 1922. These estimates are not comparable with the census returns for 1919 because the crops included are not identical in every respect and the methods applied in arriving at them are different from those applied in making an agricultural census.

2. *Live Stock on Farms.*—A second group of agricultural products consists of "live stock on farms," the total value of which on January 1, 1920, was placed at \$8,013,325,000.<sup>7</sup> Horses and mules valued at over \$2,500,000,000 constituted a large item in this huge aggregate, yet they are usually of much

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<sup>6</sup> *Farmers' Bulletin*, No. 629, p. 8.

<sup>7</sup> Fourteenth U. S. Census, Agriculture, Vol. V, p. 519.



Prepared by U. S. Department of Agriculture.  
MAP I.—COMBINED VALUE OF ALL PRIMARY CROPS.

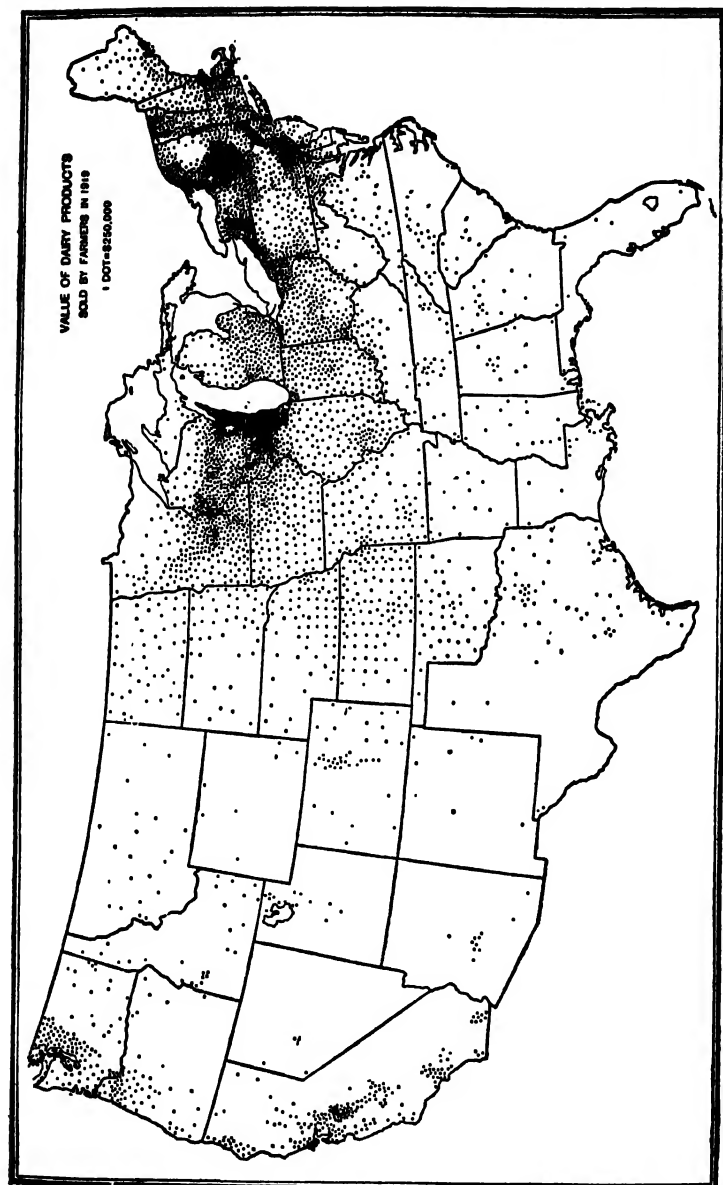
less importance in the live-stock markets than the meat-producing animals because vast numbers of them are raised for use on the farms rather than for sale in distant markets. Many horses and also mules are sold in the live-stock markets throughout the United States but the commerce in live stock is principally dependent upon beef cattle, hogs and sheep.<sup>8</sup> The total value of all domestic animals sold or slaughtered on farms during the census year 1919 was estimated at \$3,511,050,000. The census returns also include poultry, the value of fowls on the country's farms on Jan. 1, 1919, being placed at \$373,394,000. Live stock on farms constitutes mainly a secondary agricultural crop for it is in a large measure dependent upon the primary crops for its food supply

3. *Animal Products Produced on Farms.*—A third important group of agricultural crops—also secondary—consists of live-stock products produced on farms. The total annual value of farm-made dairy products exclusive of milk and cream consumed on the farms in the census year 1919 was reported to have been \$1,481,462,000, including milk sales to the extent of \$717,380,000, dairy butter valued at \$346,356,000, butter fat in terms of which much milk and cream are sold to cheese and butter factories amounting to \$303,552,000, sales of cream amounting to \$111,906,000 and smaller amounts of country-made cheese.<sup>9</sup> Enormous quantities of butter, cheese and processed milk, moreover, were produced in factories, where they virtually become manufactures and from which they are marketed. Other live-stock products of great importance in the commerce of the United States are eggs, which were in the census year 1919 valued at \$661,082,000, wool valued at \$120,418,000 and poultry valued at \$386,240,000. The value of all live-stock products of farms not including live stock sold or slaughtered on farms in the census year 1919 aggregated \$2,667,072,000. In addition over 675,000,000 pounds of meat and meat products, the result of animals slaughtered on farms, were sold by farmers.

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<sup>8</sup> See Chap. VIII.

<sup>9</sup> Fourteenth U. S. Census, Agriculture, Vol. V, p. 649.



Prepared by U. S. Department of Agriculture.  
MAP II.—DAIRY PRODUCTS SOLD BY FARMERS.

**Foreign Commerce in Farm Products.**—While the commerce in American farm products is mainly domestic they also constitute the basis for a huge export trade, and although the United States is the world's leading agricultural country, astoundingly large quantities of farm products are imported from abroad. In 1921, after prices had been deflated, the agricultural exports of the United States, including prepared food-stuffs derived from farm products, were valued at \$2,119,750,000, and agricultural commodities valued at \$1,249,768,000 were imported from foreign countries. Few phases of the commerce in the agricultural crops are of greater interest than the developments which are taking place in the country's international trade.<sup>10</sup>

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<sup>10</sup> See Chap. XXI.

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## CHAPTER II

### CLASSIFICATION OF AGRICULTURAL MARKETS AND MARKETING PROCESSES

The number of trade interests engaged in the distribution of the agricultural crops of the United States is so large, their marketing conditions so diverse, and the area throughout which they are produced and distributed so extensive that no all-inclusive system of agricultural markets and of trade organization has been universally adopted. Yet the various agricultural trades have much in common, and, subject to certain exceptions, a general system of markets and general marketing processes are traceable.

#### CLASSIFICATION OF AGRICULTURAL MARKETS

In their flow from grower to consumer, agricultural commodities usually pass through one or more of four types of markets: (1) the growers' local market, (2) the central wholesale market, (3) the secondary wholesale market, and (4) the retail market. In many instances commodities pass through the entire system or chain of markets while in others the distribution is more direct.

The actual markets of these various types are located at different points, and some are important general markets for many crops while others are of special importance in the marketing of but a single farm commodity. The principal markets for numerous farm products will be described in dealing with the trade in particular crops.

**Growers' Local Markets.**—Although the growers of agricultural products frequently ship their crops direct to large central markets, so many sell to local buyers that thousands of local markets have sprung up throughout the farming districts.

These markets are the places of business of vast numbers of local dealers of many types who stand between the farmers and the primary and secondary markets, and also of numerous local retailers and consumers who purchase for local consumption. They are the homes of thousands of local grain elevators, warehouses, cotton gins, cotton yards, stockyards, fruit, produce and leaf tobacco packing houses, stores and other local mercantile establishments.

The functions of the growers' local markets vary with the nature of the commodity handled, whether the article is purchased for shipment to outside markets or for local consumption. They also vary with local trade conditions, but may be generally summarized as follows:

1. Growers' local markets are a medium for gathering or collecting large quantities of farm products from the producers.

2. They provide convenient, nearby wholesale markets for growers who do not desire or are unable to ship direct to the larger outside markets.

3. They facilitate shipment to outside markets by providing the necessary elevation and loading facilities and by concentrating purchases until carload lots are obtained.

4. They frequently serve as temporary storage places.

5. They facilitate the initial grading, inspection, weighing, packing or other preparation of many farm products before they arrive at the central markets.

6. In some instances they serve as local retail markets for growers who are able to sell a portion of their crops to local retailers and consumers.

**Central Wholesale Markets.**—One of the distinguishing features of the agricultural trade organization is that a large portion of the country's crops is concentrated in great central markets before it is finally sold for consumption. There are three principal groups of such markets: (1) the central markets of the interior which are variously known as "primary markets," "interior points of concentration," "interior wholesale markets," etc.; (2) the "seaboard markets" of the Atlantic, Gulf and Pacific seabords; and (3) the foreign central markets to which

many agricultural exports are shipped for distribution throughout foreign countries. The difference between these central wholesale markets is sometimes merely a geographical one, but farm products frequently pass through or become the basis for trade in both an interior and seaboard market before they are finally disposed of, and agricultural exports may pass through the entire threefold chain of central markets.

These central markets are equipped with large terminal elevators and warehouses, exchanges, price committees, boards or reporters, auction rooms, live-stock yards, rail and water transportation facilities, inspection rooms, banking facilities, and all equipment needed for the storage, preparation, inspection, handling, purchase and sale, insurance, shipment and financing of large quantities of farm products. Commissionmen, brokers, auctioneers, wholesale dealers or jobbers, central distributors, contractors, exporters, importers, speculators, elevator and warehousemen, bankers, insurance men, ship brokers, inspectors, weighers, freight forwarders, trucking agencies and other commercial interests are engaged in the wholesale trade which is conducted in these markets. Many of them are, furthermore, equipped with numerous retail establishments and with flour mills, cotton or woolen mills, malt houses, meat packing plants, tobacco factories, manufacturers of mill products, or other consumers of farm products who depend upon the central wholesale markets as a direct source of supply.

The functions of the central market for farm products vary in detail but may be generally summarized as follows:

1. They concentrate enormous quantities of American and in some cases of imported foreign agricultural products into a limited number of markets.
2. They provide continuous cash markets where such concentrated farm products are purchased and sold, in many instances, in accordance with established trade rules.
3. They provide extraordinary facilities for long-time as well as temporary public and private storage of farm products.
4. They expedite the cleaning, scouring, mixing, sorting and preparation of commodities which do not arrive in approved

market condition or such as may yield increased profits as a result of such handling.

5. They greatly facilitate the sampling, handling, inspection, grading, weighing, or other similar trade services incident to the organized sale of farm products.

6. They hasten the collection and dissemination of trade information.

7. They facilitate the shipment and distribution of farm products to secondary wholesale and to retail markets as they are currently needed.

8. The central markets facilitate the establishment of nation-wide, and in some cases of world-wide, prices for many of the principal farm products—indeed it is at these markets that the wholesale prices of farm products, which underlie both growers' and retail prices, are determined.

9. They promote speculation in farm products and tend to confine it to established rules. In the cotton and grain trades organized speculation dependent upon the purchase and sale of future contracts on some of the exchanges has become of widespread importance.<sup>1</sup>

10. Although the central markets are primarily wholesale distributing centers many are also centers of consumption, having a large population requiring agricultural foods and numerous industries dependent upon agriculture for their raw materials.

**Secondary Wholesale Markets.**—There are many large and small markets where farm products are purchased in wholesale lots but which differ widely from the central wholesale markets in that they are primarily centers of consumption rather than shipping and distributing, price-making, trading, concentrating or speculative markets. They do not regularly perform any of the ten central market functions enumerated above except the last-named.

Such markets may be called secondary wholesale markets, for although they at times obtain part of their supply of farm products direct from the growers' local markets, they are mainly

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<sup>1</sup> For uses of organized speculation see Chap. VIII.

supplied from the great central markets. All the cities and communities located throughout the United States and in many foreign countries to which the central markets ship farm products in wholesale lots to be consumed in flour and textile mills, cereal manufacturing plants, tobacco factories, meat-packing and slaughtering establishments, malt houses, etc., or to be distributed by local wholesale and retail houses for final consumption, are markets of this kind.

**Retail Markets.**—Some of the principal farm staples, such as wheat, rye and barley—except for feed purposes—cotton, leaf tobacco, meat animals and wool, are not regularly retailed in their crude condition. They are more commonly retailed after having been converted into manufactured or prepared wares such as flour and feed, malt, breakfast cereals, bakery products, textiles, tobacco manufactures, meat and meat products, the marketing organization of which differs widely from that which has been developed in the agricultural trades. Other farm products, however, such as fruits and produce, eggs, oats, corn, hay, straw, milk, cheese, butter, and other milk products are more generally retailed, and retail markets for them have consequently been developed.

The retail markets in many cases overlap all the other types of markets geographically, for farmers may often retail a portion of their crops directly in their local markets, and wholesale concerns sometimes conduct a retail as well as a wholesale distributing business. The retail markets, however, are provided primarily by that multitude of small and large retail dealers who purchase farm products in the wholesale markets or from the growers and distribute them to consumers in relatively small lots.

#### CLASSIFICATION OF MARKETING PROCESSES

The trade interests which purchase and sell farm commodities in the various types of agricultural markets outlined above—growers, local buyers, central market dealers, secondary wholesalers, retailers and consumers—pursue different methods, but there is sufficient similarity between the various agricultural

trades to permit of a general description of their marketing organization.

**Growers' Sales.**—The producers of farm products usually sell their crops either in their local markets or in the central wholesale markets. In the former case they may sell to local buyers who resell in the central markets, or to local retailers or consumers for local consumption. Thus grain growers may sell to local dealers of various kinds who operate country elevators and warehouses, cotton growers to country merchants or agents of exporting and brokerage companies, stockmen to local live-stock dealers, wool growers to local wool dealers and agents of central wool dealers or of distant woolen mills, and fruit and produce growers to local shippers, distributors, brokers, or agents of wholesale dealers. Or should they sell for local consumption they may deal directly with local feed and seed dealers, local flour and grist mills, local textile mills, local butchers, local grocery stores, local creameries, cheese factories and condenseries, and nearby canneries and manufacturers of prepared fruit products, or with local consumers of fresh fruit and vegetables.

Those growers who sell in the central wholesale markets may either consign their crops to central commissionmen, brokers, distributors or auction companies, or they may sell through their own terminal salesmen. The former or consignment trade exceeds the latter in volume, for only a limited number of large growers or growers' associations have established direct salesmen in distant central markets. They may also make sales direct to central market wholesale dealers, receivers, etc., without maintaining salesmen or agents at central markets. Many current sales of farm products are made by mail or wire, some central market concerns send out local buyers, and standing agreements or contracts are often entered into between central market trade agencies and coöperative associations or individual growers of products such as fruit and produce and dairy products. Growers sometimes ship direct to distant secondary wholesale or retail markets but their local and central market sales are of predominant importance.

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Growers' sales may be further classified according to whether they are made individually or through coöperative associations. The larger number of growers sell individually but the rapid growth of coöperative associations has become one of the features of the agricultural trades. The amazing number of coöperative country grain-elevator companies, cotton growers' unions and warehouse companies, live-stock and wool-shipping associations, coöperative wool warehouse concerns, fruit and produce growers' associations, coöperative creameries and cheese factories and leaf tobacco associations which have been organized in various parts of the United States, are more fully described in later chapters. Coöperative marketing is also conducted through a multitude of general coöperative stores, coöperative potato, poultry and egg shipping associations and coöperative organizations handling other farm products. The larger number of growers' associations are local concerns which displace or compete with local dealers and buyers, and ship to the central markets on consignment, but a growing number have taken an additional step in the marketing organization by establishing salesmen, agents or brokers at the central markets with a view to obtaining maximum profits and eliminating terminal commissionmen. Some coöperative associations do not actually market the crops of their members but exert an influence on individual sales by providing trade information, establishing general trade rules, facilitating loans, inspection, packing and grading, diversified crops and storage, or in other ways more fully described in connection with particular crops and in Chapter XV.

Growers' sales differ also as to whether they are made at the current prices ruling in the local or central markets or at contract prices. The former practice, which is the more common, constitutes a spot or cash sale; the latter a future contract transaction. In many cases when a grower contracts to deliver his entire crop or specified quantities of potatoes or other vegetables, eggs, milk, wool, leaf tobacco, sugar beets or other products at agreed prices, he is "selling short" a crop which has not as yet been harvested.

When selling his products in the central markets, the grower's

sales may vary according to the place and manner of delivery.

(1) The grower may sell products "to arrive," that is before they have actually arrived at the central market, with the understanding that they will be inspected, graded and weighed upon arrival and that final settlement shall be deferred until such time. (2) He may sell them after their arrival but while they are still in freight cars or vessels, such sales being variously known as "on track," "in car" or by other terms understood in the trade. (3) He may have his products stored in elevators or warehouses to be sold at a later date, in which case the transaction is known as an "in store" sale. Live stock is similarly sold at the central stockyards after the animals have been unloaded from the stock cars, although in this case the seller's purpose is not that of storage.

Shipment to the central markets may also differ as to whether the price paid includes or excludes shipping costs. "F. o. b." transactions require the delivery of the commodities free on board at the local or other agreed shipping point, the freight charges and other shipping costs beyond to be paid by the purchaser. "C. i. f." (cost, insurance and freight) transactions on the contrary require the seller to pay the freight charges and insurance costs.

**Local Dealers' Sales.**—Farm products purchased from the grower by local consumers or by dealers who resell them for local consumption are essentially simple and require no special description. Those which are purchased by local dealers for shipment to central markets are disposed of in any of the various ways pursued by growers who sell in the central markets. The practice of selling without the assistance of central commissionmen is, however, more common among local dealers than among growers. A larger number have terminal salesmen or have standing contracts with central dealers. Many local buyers, moreover, are merely the local salaried agents of large central dealers or manufacturers who instruct them where to ship their purchases and arrange for the resale or disposition of all shipments. Some local dealers, likewise, act as local commission agents or brokers for central market buyers re-



ceiving a commission or brokerage fee on all fruit, wool or other farm products purchased on account of their principals, but having no voice in their resale at the central markets.

**Central Market Trade Organization.**—One of the chief characteristics of the trade in agricultural products is its indirectness as compared with the trade in manufactures and other commodities. A large share of the country's farm crops before they reach the consumer pass through central market exchanges, the sales of which are made indirectly through authorized exchange brokers, instead of passing directly from seller to purchaser.

An important method of marketing farm products at the central markets, therefore, is by sale on *organized produce exchanges* variously known as boards of trade, chambers of commerce, bourses or exchanges. Some of them are general exchanges on which many kinds of farm products and even nonagricultural commodities are sold, while others constitute special markets for but one or at most a small number of articles. Many of the grain exchanges, such as the Chicago Board of Trade and the New York Produce Exchange, are examples of general exchanges, while most of the cotton, tobacco, wool, livestock, milk and dairy produce exchanges are special exchanges. Produce exchanges may also be divided into spot or cash and speculative or future markets, the members of the former confining their activities to the purchase and sale of spot produce for current delivery while the latter in addition deal in future contracts which call for delivery at some future time, and, as is more fully described in a later chapter,<sup>2</sup> are frequently fulfilled without the delivery of actual farm products.

The spot or cash transactions made through exchange members are most commonly conducted on the basis of samples selected by authorized samplers and exhibited on the floor of the exchange. They may also be made on a basis of duly established grades or standards, upon a combination of both samples and grades, or the commodities in their entirety may be exhibited in authorized yards or warehouses as is the general practice in the sale of

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<sup>2</sup> See Chap. VIII, p. 191.

live stock and to some extent in the sale of leaf tobacco, wool, fruit and vegetables.

The farm products concentrated in a given central market are mainly disposed of on the exchange located in that particular center, but may also be sold on exchanges located elsewhere. Large quantities of grain held by the dealers of the primary grain markets of the West, for example, are sold through brokers on the seaboard grain exchanges on the basis of authorized samples.

The "future" transactions made on the speculative exchanges are based upon agreed standard or basis grades of a given commodity, the terms of the future contract and of the exchange rules specifying what grades may be delivered and how price differences shall be settled should other than the basis grade be delivered when the contract matures. Three principal groups of trade interests deal in "futures": (1) merchants, exporters or other dealers, millers and spinners who desire to eliminate or reduce the speculative risks resulting from fluctuations in the price of grain, cotton or mill products which they have on hand or have privately contracted to deliver or accept, frequently sell or purchase futures to hedge their spot transactions;<sup>3</sup> (2) speculators who deal in future contracts with a view to obtaining profits from fluctuations in future prices; (3) flour millers and cotton spinners who sometimes purchase future contracts on the exchanges and require the delivery of grain or cotton upon maturity, but the use of futures for this purpose has been limited because the seller may usually deliver any one or more of a number of different grades.

Farm products are at times sold at *auction sales*. It is in some cases difficult clearly to distinguish between exchange and auction markets, but the distinguishing feature of the latter is that the sales on them are made through one or a limited number of auctioneers who offer the auctioned products directly to the highest bidders who may or may not be members of an established trade organization, while the sales on the exchanges are the result of bids and offers between any of a large number

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<sup>3</sup> Hedging is described in Chap. VIII, p. 198.

of exchange members who act for themselves or as brokers for their customers.

The auction sales in the large central fruit and vegetable markets are especially common and are typical. They are conducted through auction companies which exhibit samples of fruit or produce owned by them or placed in their care by growers, local shippers, importers, commissionmen, central dealers or others and sell them through auctioneers to the highest bidders. The leaf tobacco auction sales of the South are also important, but instead of being controlled by special auction companies, are conducted on the floors of public tobacco warehouses and usually in accordance with trade regulations imposed by tobacco exchanges or public authority.

Many farm products are, also, *sold privately* in the central markets. Central commissionmen, brokers, distributors, wholesale dealers, jobbers, contractors, exporters, importers, etc., frequently deal directly with local shippers or growers, with each other, with flour and textile mills, malt houses or other consumers, or with secondary wholesale and retail establishments. Such private transactions, as in the case of exchange sales, may call either for immediate or future delivery. Private future contracts, however, usually provide for the delivery of a particular grade or quality of produce at a specified date and at a designated place which may be located anywhere in the world. They are cash contracts which differ in detail and are made by persons who intend to demand or make actual delivery. A relatively small number of large cities has established *wholesale municipal markets* where agricultural foods may be distributed through private or auction sales.

**Secondary Wholesale Market Transactions.**—Secondary wholesale markets ordinarily do not contain organized exchanges, the wholesale buyers in them purchasing their supplies of farm products in the central markets, from local dealers or growers in the local markets, or from salesmen or brokers who canvass the secondary markets for central dealers or distributors. When purchasing in the central markets any of the trade methods there available may be pursued.

The wholesale purchasers of the secondary markets are of three principal types: (1) industrial concerns such as flour mills, cotton or woolen mills, meat-packing and slaughtering plants, malt houses and tobacco factories, which purchase in wholesale lots for consumption; (2) wholesale dealers in products such as fruit and vegetables, dairy products, hay, straw and oats, who purchase to resell either to retailers or consumers; and (3) retail stores purchasing in wholesale quantities for resale in smaller lots to consumers.

**Retail Sales.**—Such farm products as are retailed to consumers are also handled through three main channels:

1. A large group of general and special retail dealers, including general retail grocers operating individually, in chains, or as members of retail associations; special fruit and produce retailers; delicatessen retailers; hucksters and vendors; milk dealers or contractors; retailers of dairy products; and grain, hay, straw and feed dealers.

2. General and special wholesale dealers who conduct a retail as well as a wholesale business.

3. Growers or producers, especially those located near the retail markets, who sell directly to the consumers.

Retailers of farm products, other than those who are growers or producers, obtain their supplies either from nearby wholesale dealers or from any of the various sources which supply the wholesale trade. Their retail sales are made directly to consumers in numerous ways. They sell (1) currently at private retail stores or other established private places of business; (2) currently at the consumers' premises as is the custom of hucksters and vendors of fruit and vegetables and of such retail stores as daily send solicitors to the consumers or use their delivery service for soliciting purposes; (3) by obtaining a permanent order or agreement to deliver specified quantities of milk or other products until notified to the contrary; and (4) at public or municipal markets.

Growers or producers likewise retail chiefly in the four ways mentioned in the preceding paragraph. Their permanent retail stores, however, are relatively of least importance, consisting

mainly of general coöperative stores, most of which are organized primarily to purchase groceries and general merchandise and for the profit anticipated from the sale of such wares to outside customers rather than as important means for selling farm products. Growers retail mainly at the consumers' premises, either currently or on the basis of standing orders, and in municipal markets. Live stock is frequently retailed at open markets known as "cattle fairs," "horse markets," etc., where livestock may on agreed days be sold privately or at retail auctions. Small quantities of eggs, fruits and produce have been retailed through the medium of express companies and the parcel post service.

Municipal markets for the sale of vegetables, fruit, eggs, butter, poultry and other farm produce and foodstuffs by growers and dealers have been established in various cities. Some of them are open-air or curbstone markets and others covered or inclosed markets. Most of them are strictly retail markets while others are used both for wholesale and retail selling. Some are operated free of charge while others require growers and dealers to pay a license fee or an annual, monthly, weekly or daily rental. The sales in these markets, moreover, may be made from wagons and trucks or from fixed stands, and they may or may not be subjected to public inspection. There has been much agitation in favor of establishing a larger number of municipal markets in the larger cities. There are also some who desire the establishment of large wholesale or terminal municipal markets where farm products of many kinds received from distant as well as from nearby growers could be properly inspected upon arrival and either retailed in small lots by the growers or distributed to retail dealers and large consumers in wholesale lots, privately or at auction sales conducted by bonded municipal auctioneers.

Direct retailing of farm products by producers to consumers has been facilitated by the parcel post service, by efforts on the part of the express service and by the use of motor truck or improved highway transportation services. Reasonably prompt and regular deliveries usually can be made direct to consumers

from nearby producing areas. The importance of direct retail sales and shipments to consumers in the agricultural trades as a whole should not, however, be overestimated. A large proportion of farm products is now and probably will continue to be distributed through wholesale trade channels not only because some of the great farm staples are not handled at retail, but because most wholesale trade agencies perform valuable economic functions. In the agricultural trades in which the retail trade is important, the direct distribution of farm products to consumers is mainly although not entirely, confined to nearby producers. There is always the difficulty of establishing direct business connections between farmers and consumers in case they are far removed from each other. Unless, the growers maintain local retail establishments, or make deliveries at the customers' premises, there is the further difficulty that the customers cannot inspect the products before purchasing them or before delivery. Accurate grading would overcome this difficulty in part, but in practice the grading of farm products usually is less definite when direct retail sales are made by farmers than when their products are distributed through the wholesale trade where organized inspection and grading services are in many instances maintained. Most consumers buying in retail quantities are not given to ordering their agricultural foods in advance of current requirements nor will many of them tolerate even a slight uncertainty in deliveries dependent upon parcel post, express or motor truck transportation services, which usually at their best are less certain than deliveries by nearby retail stores or other local retail agencies.

**Consumers' Purchases.**—As the growers of farm products stand at one extreme of the agricultural trade organizations so the consumers stand at the other. Consumers may purchase in any of the various groups of markets, and at any step in the trade machinery provided for the purchase and sale of farm commodities. Some of them purchase directly from the farmers or from local market dealers, some purchase in the central markets from any of the wholesale trade interests located there or in the secondary wholesale markets from wholesale dealers

stationed at such points, and others obtain farm products from agricultural retail dealers. The description of the agricultural trade organization may begin either with the growers or the consumers and since the former method facilitates discussion and obviates undue repetition it has been adopted in this and succeeding chapters.

The increased cost of foodstuffs has in recent years encouraged the formation of "consumers' leagues" or associations which in most instances endeavor to instill publicity into the marketing organization and to instruct consumers how to purchase, although they sometimes in order to reduce retail prices undertake the purchase and resale of agricultural foods. Coöperative consumers' retail stores have also been organized in a few cities.

### EXPORTING AND IMPORTING METHODS

**Agricultural Export Methods.**—Many trade interests are engaged in the exportation of American farm products, and as will be shown in subsequent chapters the methods of exporting are not uniform. Most of the various kinds of agricultural exporting concerns may, however, be divided into three principal groups:

1. *American Exporting Concerns.*—American exporters who handle farm products on their own account may be either general or special, the former shipping a variety of commodities, and the latter one or at most a small number of farm products. Most of them are specialized, and many are engaged in domestic as well as in foreign commerce. Thus, much grain is exported by terminal grain-elevator companies, central market grain dealers and special grain-exporting concerns. Most of the cotton is shipped by American cotton-exporting companies or brokerage concerns; most export cattle by the large meat-packing houses and by special live-stock exporting concerns; and much leaf tobacco by subsidiaries of tobacco manufacturing concerns or by special leaf tobacco dealers and packers. The headquarters of these exporting concerns may be either in the central markets of the interior or in the seaboard markets.

2. *American Commission Houses.*—A portion of the agricultural exports is handled by domestic commission houses, which may likewise be either general or special. Indeed the exporting concerns mentioned above sometimes fill orders on a commission basis instead of buying and selling on their own account.

3. *Foreign Agents.*—Foreign importers at times send agents to the United States to purchase American farm products. The practice is especially common in the exportation of leaf tobacco, but it exists also in other branches of the agricultural export trade.

4. *Direct Sales Abroad.*—Direct sales in foreign markets by American producers of farm products, without the services of an American or foreign export middleman located in the United States, are exceptional. Instances of where arrangements for the exportation of dairy products, grain and perhaps other products were made directly with foreign importing agencies by coöperative marketing associations may be cited but in view of the continued importance of wholesale middlemen in the domestic trade in farm products it is hardly to be expected that much progress should have been made in the direct exportation of farm products to overseas foreign markets.

The exporters of farm products make their purchases in any of the markets and in any of the various ways in which agricultural commodities are purchased for domestic use. They ship them to foreign import houses, wholesale dealers, commissionmen, brokers, and sometimes directly to foreign consumers. They dispose of them both by private sale and on foreign or American exchanges, and in many instances they merely fill orders which they have received from abroad. In the foreign trade, sales to foreign buyers are very frequently made on the basis of grades or agreed standards rather than on the basis of samples, for the foreign markets are far removed and a vessel load of grain, cotton or other farm staple may be resold by the original importers long before its arrival.

The trade machinery is unusually well organized in the agricultural export trade. Foreign and American exchanges and



commercial houses are connected by cable; orders based upon established grades or standards can be readily transmitted; and trade customs and practices are of long standing and are well understood by all parties concerned. For these reasons and because of the relative ease with which markets have in the past been found for foods and raw materials, many of the costly marketing methods which are necessary in the exportation of manufactures are not essential to the successful exportation of American farm products.

**Agricultural Import Methods.**—There is even less uniformity in the methods of importing farm products, for the imports include a wider variety of commodities and are obtained from an amazingly wide range of countries. Many are imported from the more recently opened trade regions of the world rather than from the well-established countries of western Europe.\*

They are imported principally by four groups of concerns:

1. *American Import Houses.*—There are many special and general importers who purchase foreign agricultural products on their own account with a view to reselling them to coffee roasters, sugar refineries or other consumers or dealers.

2. *American Import Commission Houses.*—Some agricultural imports are handled on commission by concerns to whom they have been consigned or to whom purchasing orders have been given.

3. *American Consumers.*—American manufacturers, particularly those requiring large quantities of raw agricultural materials, sometimes import directly from foreign exporters. For the production of some commodities, such as bananas, leaf tobacco, and sugar, American traders and manufacturers at times own foreign plantations on which they produce a portion of their requirements.

4. *Import Brokers.*—Trade connection with foreign exporters whether by American import houses, American import commission houses or American consumers is frequently made through import brokers.

Imported farm products are variously purchased from foreign

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\* See Chap. XXI.

export houses, wholesale dealers, commissionmen, brokers, central sugar refineries or other middlemen, or directly from foreign producers. They are sometimes purchased in the country in which they are produced and at other times indirectly in England, Holland, Belgium, Germany or other European countries where wool and other products are concentrated for resale and transshipment. They are variously purchased privately, on exchanges, or at public auction sales. Bids and offers may be made by cable or mail, standing arrangements with foreign exporters or commissionmen may be made, and numerous American buyers are sent abroad so as to reduce costs and obtain the quality of products desired at favorable prices. When foreign agricultural products are imported to be resold in the United States they are disposed of privately, on exchanges or at auction sales in the same manner that domestic farm products are sold in the wholesale markets. Some imported farm products, such as green coffee, and raw sugar, are frequently sold on organized American exchanges, but in the agricultural import trade as a whole such sales are less common than in the export trade.

Although the agricultural trades are similar, the districts in which they are produced, their markets, the methods of buying and selling, shipping, inspecting, grading, storing and otherwise handling them, the extent and manner of public or exchange control, the methods of collecting trade information, and the factors influencing their prices, all differ in many respects. The purpose of subsequent chapters is to describe the trade in some of the principal farm crops in greater detail.

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## CHAPTER III

### THE COUNTRY GRAIN ELEVATOR AND WAREHOUSE SYSTEM: THE LOCAL GRAIN MARKET

**Functions of Country Elevators and Warehouses.**—Before that portion of the country's grain crop which is marketed by the growers, is concentrated at a relatively small number of great primary grain centers, it passes through thousands of local grain markets. The grain farmer's markets are ordinarily not the huge elevators found at the central grain markets of the interior and the seaboard, but the thousands of small country elevators and warehouses which are scattered throughout the two hundred million acres which produce the country's principal grain crops. The sales of many thousands of grain growers of the United States are made principally at the country elevators and warehouses which constitute the first link in the extensive trade and shipping organization which has been evolved for the sale and distribution of the grain crops. As is shown in Table II they annually handle over four million bushels of wheat, over five hundred million of corn, over three hundred million of oats, from ninety to one hundred million bushels of barley, and smaller quantities of rye, flaxseed and other minor grains.

As is stated by the Bureau of Labor Statistics, "The province of the country grain elevator is to supply a market to the farmer for his grain, to afford a temporary storing place for grain going to market, and to provide an easy means of transferring it from the farmers' wagon to the car for shipment."<sup>1</sup>

#### GEOGRAPHICAL DISTRIBUTION OF THE LOCAL GRAIN TRADE

**Distribution of Local Wheat Trade.**—The United States has in recent years raised over 800,000,000 bushels of wheat an-

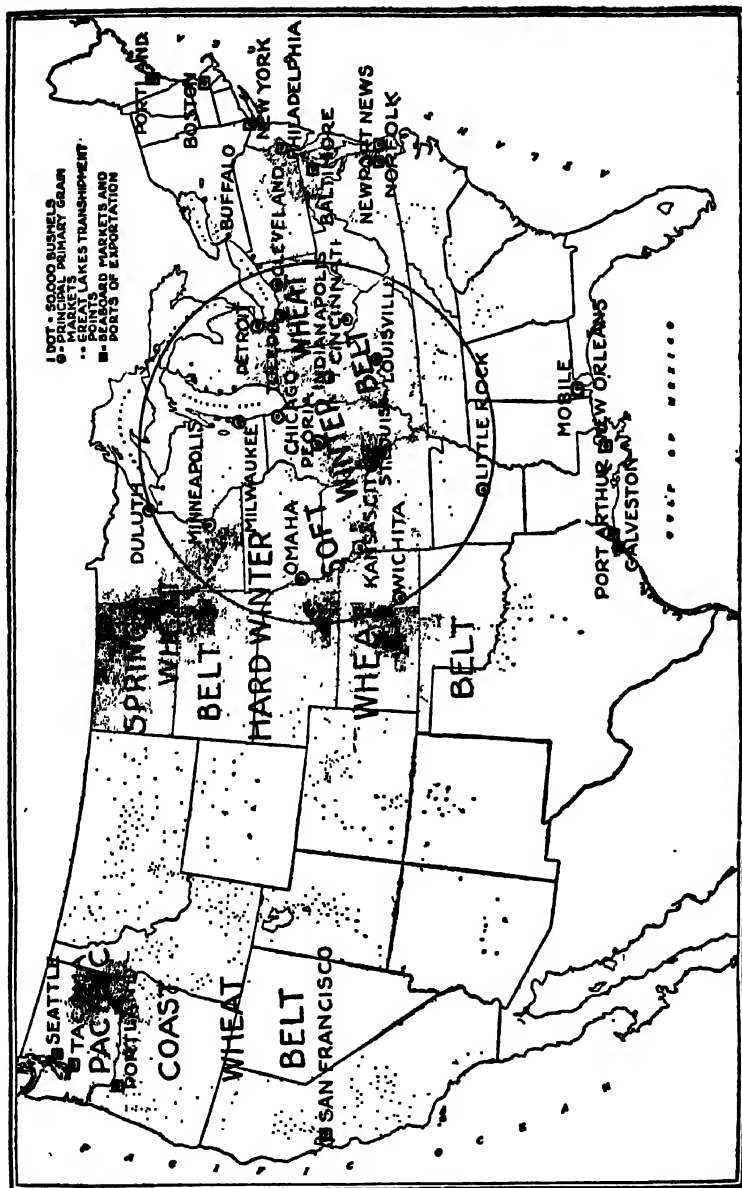
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<sup>1</sup> "Wheat and Flour Prices from Farmer to Consumer," *Bulletin No. 130*, p. 17.

nually, having a farm value of from \$750,000,000 to nearly \$1,200,000,000. Prior to the European War, the country's annual wheat crop was second only to that of Russia, and for many years it exceeded that of any foreign country. Since the Russian Revolution, the United States has again become the leading producer of wheat. American wheat exports, owing to largely enhanced home requirements, steadily declined during the twentieth century, and prior to the European War were exceeded by those of Russia and Argentina. Indeed, were it not for the exports of American wheat flour, the exports of wheat from the United States would also have been exceeded by those of Roumania, Canada, Australia and British India, in each of which countries there is a growing surplus as there was in the United States during the eighties and nineties. Before the outbreak of the War only 10 to 19.5 per cent of the American wheat crop was exported as compared with 21 to 41.5 per cent during the years 1875 to 1900. During and following the War, however, from 21 to 41 per cent of the American crop was exported and American wheat, including flour, again rose to first place in the international wheat trade.

The wheat-growing area of the United States has been spread over such a wide territory that there is little likelihood of a general crop failure. Local failures are not uncommon, but the diversity in variety of wheat and geographical location tends to maintain a high average crop. During the year 1913 the order of importance of the principal wheat-growing states was: North Dakota, Kansas, Minnesota, Nebraska, Washington, Illinois, Indiana, Missouri, Ohio, South Dakota, Pennsylvania, Montana, Oklahoma, Iowa and Oregon. In 1922 their order of importance was: North Dakota, Kansas, Nebraska, Illinois, Missouri, South Dakota, Montana, Ohio, Washington, Oklahoma, Indiana, Minnesota, Pennsylvania, Idaho, Colorado, Oregon and Iowa.

As is shown in the accompanying map (No. III), the wheat-growing area may be divided into four principal districts. The first or soft winter wheat belt comprises the states lying east of the Mississippi and north of the Ohio River from western Pennsylvania to Illinois. The second, comprising the central



MAP III.—WHEAT GROWING DISTRICTS.

trans-Mississippi Valley, Kansas, Nebraska, Missouri, Oklahoma, and Iowa—extending as far west as the Great Plains—grows chiefly the various varieties of hard winter wheat. The third, or spring wheat belt, includes North and South Dakota and Minnesota. The fourth includes the wheat fields of the Pacific Slope—Washington, Oregon, Idaho and parts of California—where both spring and winter wheat are grown. The rapidly expanding wheat fields of Montana and Idaho may either be included in the last-named district or regarded as the leading producers in a fifth or Rocky Mountain wheat belt. Map No. IV shows the extent of wheat production in the census year 1919.

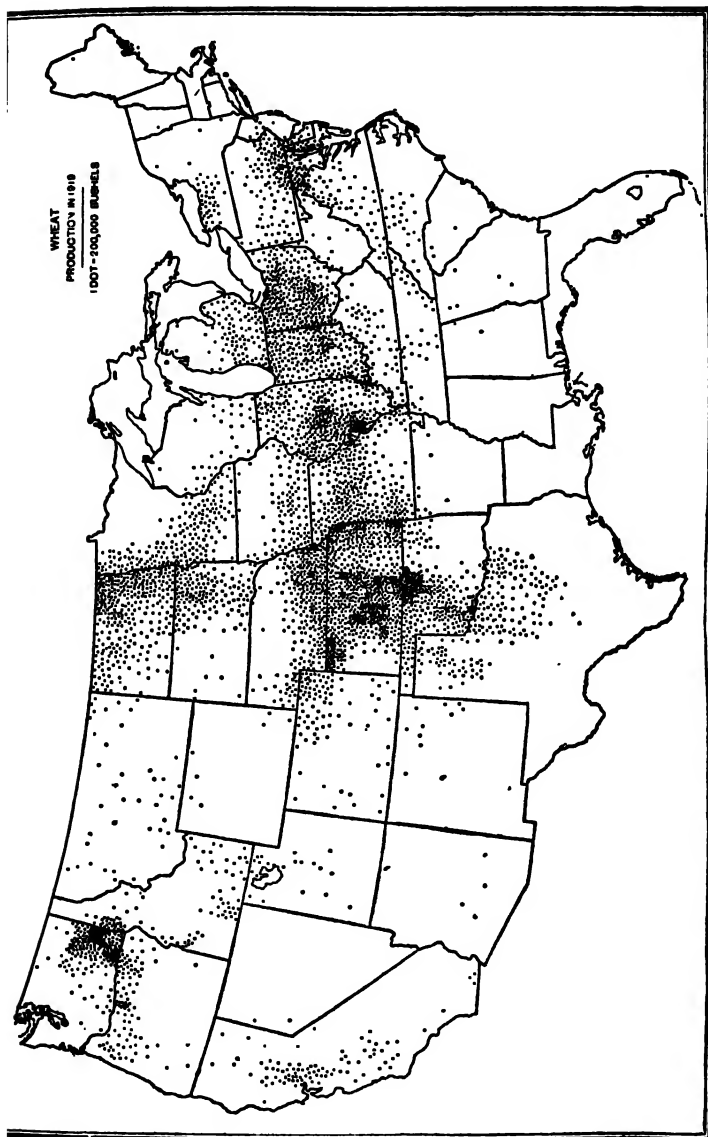
The Department of Agriculture estimates that during the decade ending in 1915, 57.7 per cent of the country's wheat crop reached the grain market, that is, was shipped out of the county in which it was grown. The remainder was retained by the wheat growers for seed, locally ground into flour or feed, or sold for local consumption. Most of the 350,000,000 to 575,000,000 bushels which annually entered the country's grain trade was handled locally by country elevators or warehouses.

**Distribution of Local Corn Trade.**—As is shown in Table II the corn crop of the United States is vastly more important than the wheat crop. In 1920 it reached the enormous total of 3,208,584,000 bushels having a farm value exceeding two billion dollars. Over 70 per cent of the world's annual corn crop is normally grown in the United States;<sup>2</sup> its nearest rivals—Canada, Argentina and Austria-Hungary—producing less than 300,000,000 bushels each.

Though about 500,000,000 bushels of corn annually enter into the grain trade of the United States, grain dealers have always been primarily concerned with the wheat crop. This is because less than 30 per cent of the total corn crop reaches the country's grain markets. Over 70 per cent annually is disposed of locally for seed purposes and to fatten livestock. Much the larger share of the corn crop reaches the grain trade only after it has been

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<sup>2</sup> In 1921 the United States produced 83.2 per cent of the world's corn crop.



Prepared by U. S. Bureau of the Census, Bul. 146 (1921).

MAP IV.—THE WHEAT CROP IN 1919.



TABLE II

PRODUCTION, QUANTITY MARKETED AND FARM VALUE OF LEADING GRAIN CROPS: (000 Omitted)

Item	1900	1905	1910	1912	1913	1922
Wheat crop of U. S. .... (bu.)	522,230	692,979	635,121 <sup>2</sup>	730,267	763,380	856,211
Wheat shipped out of county where grown	281,372	404,092	378,711	449,844	411,461	574,452
Winter wheat crop of U. S. ....	350,025	428,462	434,142 <sup>2</sup>	399,919	523,561	586,204
Spring wheat crop of U. S. ....	172,201	264,517	200,979 <sup>2</sup>	332,348	239,819	270,007
Wheat crop of world .....	2,640,751	3,327,084	3,575,055	3,879,084	4,125,658	3,035,841
Corn crop of U. S. ....	2,105,103	2,707,994	2,886,260 <sup>2</sup>	3,124,746	2,446,988	2,890,712
Corn shipped out of county where grown ..	478,417	681,539	692,975	680,195	425,882	575,236
Corn crop of world .....	2,792,561	3,461,181	4,031,630	4,362,288	3,607,359	4,016,226 <sup>2</sup>
Oats crop of U. S. ....	809,126	953,216	1,183,341 <sup>2</sup>	1,418,837	1,121,768	1,215,496
Oats shipped out of county where grown ..	242,850	277,133	351,454	438,266	297,269	304,558 <sup>2</sup>
Oats crop of world .....	3,166,002	3,510,167	4,182,410	4,618,644	4,672,168	3,173,118 <sup>2</sup>
Barley crop of U. S. ....	58,926	136,551	173,832 <sup>2</sup>	233,824	178,189	186,118
Barley crop of world .....	959,622	1,180,053	1,388,734	1,466,313	1,613,748	186,885 <sup>2</sup>
Rye crop of U. S. ....	23,996	28,486	33,039	35,664	41,381	95,497
Flaxseed crop of U. S. ....	20,000	28,478	14,116	28,073	17,853	12,238
Buckwheat crop of U. S. ....	9,567	14,585	17,239	19,249	13,833	15,050
Farm value of wheat crop of U. S. ....	\$323,515	\$518,373	\$561,051	\$555,280	\$610,122	\$864,139
Farm value of corn crop of U. S. ....	751,220	1,116,697	1,384,817	1,520,454	1,692,092	1,900,287
Farm value of oats crop of U. S. ....	208,669	277,048	408,383	452,469	439,596	478,548
Farm value of barley crop of U. S. ....	24,075	54,993	100,426	112,957	95,731	97,75

<sup>1</sup> U. S. Department of Agriculture Year Book (1900 to 1921); Weather, Crops and Markets, Dec. 23, 1922. <sup>2</sup> Figures adjusted to census basis. <sup>3</sup> 1921.

converted into live stock or beef, mutton and pork products.<sup>3</sup> Yet, there are thousands of local grain elevators and warehouses which handle corn, for the volume which now reaches the grain trade exceeds that of wheat.

As is graphically shown in Map No. V, though appreciable quantities of corn are grown throughout the southern states and in various regions throughout the country, there is really but one great American corn belt, and it extends through the Ohio and Mississippi River Valley from Ohio to Northern Texas. The cornfields of Iowa, Illinois, Indiana, Ohio, Nebraska, Missouri, Kansas, and Texas provide the corn market with most of its annual supply and feed vast numbers of cattle, sheep and hogs. Largely increased corn crops have also in recent years been grown in Minnesota and South Dakota.

**Distribution of Local Trade in Oats.**—The oats crop of the United States (see Table II), is also larger than that of any foreign country in the world. So large, however, are the crops of Russia, Germany, Canada, France, Austria-Hungary, Great Britain, Argentina and other countries, that the oats fields of the United States before the War produced but 20 to 30 per cent of the world's crop. The high point was reached in 1915.<sup>4</sup> The international trade in both oats and corn is small as compared with that of wheat, the exports of American oats being almost negligible except during the war period and those of corn in recent years comprising from 1½ to 4½ per cent of the annual crop. As in the case of corn, moreover, much the larger share of the oats crop of the United States is retained for local consumption and does not enter the country's grain trade. During the decade ending in 1914 somewhat less than 30 per cent of the annual oats crop was shipped out of the country in which it was grown. To collect 300,000,000 bushels of oats annually from the thousands of farmers who sell a portion of their crop,

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<sup>3</sup> N. C. Murray, "Distribution of Feed Crops," *Farmers' Bulletin* No. 629, p. 8.

<sup>4</sup> In 1921 the United States produced 36.6 per cent of the world's crop.

however, requires a large number of country grain elevators and warehouses. Many of those located in Iowa, Minnesota, Illinois, Wisconsin, North and South Dakota, Nebraska, Michigan, Pennsylvania, Indiana, Texas, Oklahoma, Kansas and Missouri, regularly handle oats as well as other grains. All the states of the corn belt are heavy producers of oats, but the oats crop is more widely scattered, for oats thrives in northern states such as Wisconsin, Michigan and in the northern-most states of the spring wheat belt where the early frosts have retarded the rapid introduction of corn.

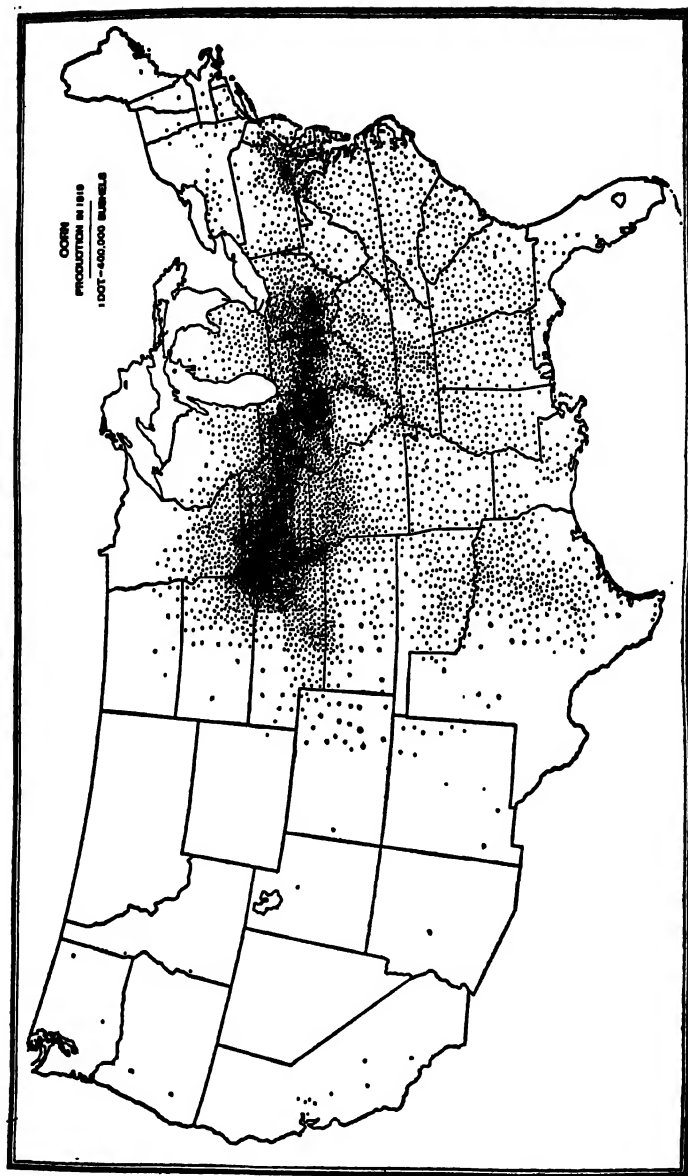
**Distribution of Local Trade in Barley.**—The barley crop of the United States is decidedly smaller than that of wheat, corn or oats (*see* Table II). The greatest barley-producing country during the pre-war period was Russia, where over 574,000,000 bushels were grown in 1913 as compared with 178,189,000 bushels in the United States. From 45 per cent to over 57 per cent annually of the American crop reaches the grain market, principally in California, North Dakota, Minnesota, South Dakota, Kansas and Wisconsin. The crops of other minor grains—rye, buckwheat and flaxseed—are included in Table II.

#### TRANSFER OF GRAIN FROM GROWER TO COUNTRY ELEVATOR OF WAREHOUSE

**Length and Cost of Local Haul.**—Though the number of country elevators and warehouses at which the grain growers sell their crops is increasing, and their location at local shipping points is arranged with reference to the proximity of the grain fields as well as with reference to railroad connections, much grain requires long and expensive country hauls. The average distance from the wheat fields of the United States to the local markets in which it is sold was in 1906 reported to be 9.4 miles, and to vary from 4 to 22 miles in different states;<sup>5</sup> and corn was in that year hauled by the growers to the country elevator, an

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<sup>5</sup> "Costs of Hauling Crops from Farms to Shipping Points," U. S. Bureau of Statistics (Department of Agriculture), *Bulletin No. 49*.



Prepared by U. S. Department of Agriculture.

MAP V.—THE CORN BELT.

average distance of 7.4 miles in the United States as a whole and from 3.2 to 29.4 miles in various states. The average distance from all farms producing crops of every kind to the local markets in 1915 was reported to have been 6.5 miles, and from the more remote farms 8.7 miles.\*

The average cost of transporting grain to the local markets was in 1906 reported to be 9 cents per 100 pounds in the case of wheat and 7 cents in the case of corn. Inasmuch as railway-lake rates on wheat from Chicago to New York varied from 5.02 to 7.01 cents per bushel during the years 1900 to 1913, and all-rail rates ranged from 9.60 to 11.70 cents, it is evident that the country haul, although short as compared with the railroad haul to or from the central grain markets, is an important consideration in the local grain trade. The Bureau of Statistics of the Department of Agriculture estimated that the cost of hauling the 1905-1906 crop of corn, wheat, oats, barley and flaxseed from the farms to local shipping points aggregated over \$62,000,000. The cost of hauling corn was estimated to comprise 9.6 per cent, wheat 7.2 per cent, oats 7.7 per cent, barley 8.3 per cent, and flaxseed 5.3 per cent of the farm value of the loads hauled.

**Methods of Local Hauling.**—Grain is conveyed to local shipping points by various methods. Most of it is hauled by the growers themselves, and is regarded as a secondary source of employment for the equipment and drivers whose chief employment is on the farms. Each grower may perform his hauling individually, or neighboring growers may perform it coöperatively. Some grain hauling, however, is performed by hired "freighters," for in some parts of the Mississippi Valley and especially in the Pacific Slope and Rocky Mountain grain belts, the distances to local shipping points are so long that it is unprofitable for the growers to maintain sufficient equipment and drivers to perform all the necessary hauling. The professional freighters haul grain and other farm produce at regular tariffs and on the return trip frequently transport farm machin-

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\* U. S. Bureau of Crop Statistics, *The Agricultural Outlook*, Apr. 23, 1915, and *Farmers' Bulletin No. 672*, pp. 11-14.

ery, supplies or merchandise. Some hauling is also done by the elevator companies.

Grain may be hauled either in bulk or in sacks, and it may be hauled either from the grower's granary or direct from the threshing machine in the fields. The practice in these matters depends upon the requirements and customs of particular markets, the method of harvesting, the financial condition of the growers, their views as to the desirability of present or future marketing and other local considerations. The type of equipment used, likewise, varies and depends somewhat upon local conditions, such as the length of haul, the condition of the roads, and the method of hauling. The number of horses or mules per driver varies from two to fourteen, the number of wagons per haul from one to two or more, and the weight of grain hauled from 800 to 16,000 pounds. The wagons may be ordinary farm wagons, or vehicles especially constructed to carry grain in bulk, and they may be hauled individually or in trains. Professional freighters sometimes haul loads of seven tons in one freight wagon and its trailers, and use as many as twelve or fourteen horses in one team. Increasing quantities of grain have in recent years been hauled to local shipping points in automobile trucks operated either by the growers themselves or by established motor truck services. Improved highway transportation is rapidly becoming an important asset in farming communities.

#### DESCRIPTION OF COUNTRY ELEVATORS

Country elevators are located and constructed so as to perform their various functions expeditiously. In every important grain-growing district, except on the Pacific Slope where most of the grain is handled in sacks, there are hundreds of these elevators along each of the grain-carrying railroads. Many local grain-shipping points are equipped with five or six elevators, and at most local markets in important grain-growing districts there are at least two.

Country elevators usually have a capacity of only 20,000 or 25,000 bushels and consequently cannot store large volumes of

grain for long periods of time. Since a large proportion of the grain available of the market is sold by the growers during the ninety days after its harvesting, they are so equipped that they can handle from 40,000 to 300,000 bushels, some handling as much as 1,000,000 bushels annually. The yearly output of the average country elevator is 100,000 bushels or less. Under normal pre-war conditions, it was considered that an annual business of 100,000 bushels of wheat bought at the primary market price minus the freight rate and a price margin of three or four cents per bushel yielded a fair profit on the investment. Since then this average price margin has more than doubled.

These elevators are constructed so as to reduce operating costs to a minimum. The following concise description is given by the Bureau of Labor Statistics:

The country elevator is so constructed as to call for very little manual labor. The farmer drives on the scales with his loaded wagon, which is weighed in gross, then drives into the elevator shed where the end board is taken from the wagon, and by the pulling of a lever the wagon is tipped backward and all the grain runs out of the wagon box into the bin below. He then drives on the scales again and the empty wagon is weighed. From the difference in these weights the number of bushels is computed and the farmer receives a certificate of weight and possibly at the same time a check for his grain. The wheat dumped into the bin below the wagon floor is hoisted by elevating machinery to a bin in the elevator whence it is spouted into a car for shipment.<sup>7</sup>

The ordinary elevator has but ten or eleven bins or lofts into which the grain is elevated from the bins below the wagon floor. Fewness of separate bins, as well as trade considerations, leads to the mixing of the grain. Indeed one source of elevator profit is the skillful mixing of different grades in such a way as to raise the grade of a part of the grain purchased from the farmers.

The operating costs of the average country elevator are low because a manager and from one to three helpers are able to

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<sup>7</sup> "Wheat and Flour Prices from Farmer to Consumer," *Bulletin No. 130*, p. 17.

operate it even during the busy season, and one or two men can operate it during the months of dull business. During the crop year 1913-1914, in the case of wheat, a margin of 3 or 4 cents per bushel and an allowance of the freight rates to the primary market was considered sufficient to cover operating costs, insurance, inspection fees, "shrinkage" in weight incident to handling the grain and all current expenses, as well as a return on the investment. In purchasing corn, oats and barley a margin of  $1\frac{1}{2}$  to  $2\frac{1}{2}$  cents per bushel was ordinarily allowed in computing the country price, while, owing to a greater degree of risk, the margin in local purchases of flaxseed was usually 5 cents or 6 cents a bushel. These margins were of course not adhered to by all elevators, wider margins being deducted in many instances.

Price margins over and above freight charges deducted from primary market prices by country elevators were greatly increased during and following the war. The Federal Trade Commission's investigations showed an average buying margin of 11.55 cents for No. 1 northern and 15.03 cents for No. 3 northern during the war crop year 1916-1917 and the Joint Commission of Agricultural Inquiry reported an average wheat buying margin of 13 cents for the crop year of 1920-1921.<sup>8</sup> The Federal Trade Commission reported an average country elevator buying margin of 3.21 cents for No. 3 white oats and 7.56 cents for No. 2 rye during the crop year 1916-1917 and it reported an average buying margin for all grain of 6.03 cents per bushel in 1916-1917 and 8.05 cents in 1919-1920.<sup>9</sup> For the crop year 1920-1921 the Joint Commission reported country elevator buying margins on various grades of oats shipped to different primary markets ranging from 1.3 to 4.1 cents per bushel; on various grades of corn ranging from 0.8 to 7.3 cents, and on various grades of barley ranging from 1.7 to 15.1 cents.

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<sup>8</sup> Federal Trade Commission, *The Grain Trade*, Vol. I, County Grain Marketing; Joint Commission of Agricultural Inquiry, Part IV, *Marketing and Distribution*.

<sup>9</sup> *Senate Document No. 40*, Sixty-Seventh Congress, 1st Session.



### MANAGEMENT OF COUNTRY GRAIN ELEVATORS

**Classification of Country Elevators.**—Country grain elevators are owned and managed in three principal ways: (1) By “line elevator companies,” (2) by local grain dealers, and (3) by farmers’ coöperative elevator associations or companies. In addition to the many elevators operated in these ways, a smaller number of elevators are operated, (4) by mill owners and malting concerns. A portion of the barley crop is purchased directly from the farmers through elevators operated by malting plants, but the number of country elevators operated by flour and grist mills is small. A few country elevators are also owned and managed (5) by “bonanza farmers” whose acreage and crop are sufficiently large to warrant the investment of funds in elevator properties. The railroads still have an interest in some elevators, and some grain is consigned to central commissionmen by farmers or shippers who load the grain into cars without the medium of elevators or warehouses.

**Line Elevator Companies.**—The so-called “Line Elevator Company” is a concern operating large numbers or lines of country elevators along one or more railroad routes and has its headquarters at the primary market to which it ships most of the grain purchased from the farmers. Some of these concerns which were first organized in the period of 1889 to 1900 operate lines of elevators extending throughout three or more states. In competing with local train elevator dealers, the line elevators have the advantage in that they extend over wide areas and consequently obtain a larger share of the crop. Since the profits of country elevators depend not only upon the price margin but also upon the volume of grain handled, the line elevator concerns have at times been able to make a fair aggregate profit even though the profit per bushel of grain was small. They have an advantage also in that the large volume of grain handled enables them to sell their grain at the primary markets through agents of their own. By avoiding the central commissionman they eliminate one of the middlemen of the grain trade. It has, moreover, been asserted that in the past, before common carriers were subjected to stringent federal and state regulation,

the line elevator concerns sometimes had the advantage of special railroad charges and services.

The local agents in charge of line elevators receive daily instructions from headquarters by mail as to the prices to be paid for all grades of the various grains purchased, and when wide price fluctuations suddenly occur at the primary market during the day price changes are telegraphed to them. The prices paid the farmers depend upon the prices prevailing at the primary grain market, the farmers receiving the primary market prices less the cost of freight and a margin or allowance of a certain number of cents per bushel.

The grading of the grain at the country elevators is largely a matter of local judgment, because grading and inspection at the local markets is not regulated by law to the extent that it is at the primary grain markets. At points where several buyers are stationed the resulting competition has in recent years usually guaranteed liberal grading to the farmer because it is to the interests of the various elevator concerns to handle as large a volume of grain as possible. At noncompetitive points there is more complaint on the part of farmers.

Since most of the available grain is purchased from the farmers shortly after its harvesting, the line elevator companies require large sums of cash during the busy season. Being large concerns they can, of course, provide a portion of the needed funds directly from their own resources, but additional cash with which to buy grain at the country elevators is realized on the grain which is shipped to the primary market from day to day and sold at a profit. Grain which has been sold before it has actually arrived at the primary market, may be shipped on order bills of lading and may provide the local elevator agents with cash at the time of its shipment, for banks accept such bills for payment. Some cash, moreover, is borrowed from local and city banks with grain as collateral. As will be more fully explained in other connections, grain "warehouse receipts" issued at the central elevators in the primary markets, when accompanied by an insurance certificate, are readily accepted by many banks as collateral for loans.<sup>10</sup> Loans or advances are also

obtained from commission houses, farmers and other local residents, mills, terminal dealers and stockholders.

The profits of the line elevator companies result from the sale of grain in the primary markets at a higher price than the price paid to the farmers. They sell to central grain jobbers or dealers, to speculators and to flour-and-grist-mill operators, exporters, malt concerns, or cereal food manufacturers. They may sell their grain immediately after its purchase from the farmers, or they may hold it for a rise in price, and they may contract to deliver grain at the primary market even before they have purchased it from the growers. Ordinarily they aim to sell at a price which will yield them a reasonable trade profit on each bushel handled, rather than to hold grain in storage for a speculative future profit. To safeguard their trade profit they habitually base their country prices upon the prices prevailing at the primary market, deducting from the latter the freight rates and a price margin sufficient to cover expenses and yield a profit on the investment. Since the prices at the primary markets fluctuate, the line elevator companies do not, however, depend wholly upon the small price margin which is allowed. Many do not contract to deliver grain which they do not possess at the time of sale, or keep on hand grain which is not immediately sold, without protecting their trade profits by "hedging" in the speculative markets of the large grain exchanges. To again quote the report of the Bureau of Labor Statistics:

When he has a quantity of wheat on hand he hedges in the grain market by selling a future; that is, he enters into a contract of sale for future delivery. Should the price of wheat advance he makes a profit on his wheat in stock and loses on his future when he closes it out. On the other hand, should the price of wheat decline, he loses on his wheat in stock but makes a profit on his future by buying on the market at a lower price to close it out. Thus, the speculative side of the grain market affords the dealer in actual grain an opportunity to do a comparatively safe and conservative business. Without the

opportunity to deal in futures, conservative dealers state that they would not buy wheat in any considerable quantity except on a much wider margin and at a consequent lower price.

Since "hedging" is not peculiar to the local grain trade it will be more fully discussed on a later page.<sup>11</sup>

**Local Grain Dealers' Elevators.**—The manner of conducting the business of country elevators operated by independent local grain dealers is substantially the same as that described in connection with line elevator concerns, with the exception that they are not managed from headquarters located at the primary market and ordinarily sell through central commissionmen instead of through their own agents. The local grain dealers preceded the line elevator companies. Originally they operated independently of each other, and some of them still act individually, but many of them have for various reasons united into "local grain dealers' associations." The associations were originally formed in order to obtain favorable treatment from railroad carriers; to correct abuses in local grading and to induce farmers to sell their grain under a system of grading; to correct abuses at the primary markets in the matter of grading, inspection, weighing and "dockage" for unclean grain; and to induce the farmers to bring their grain to market in a better and cleaner condition. The organization of dealers' associations began prior to the rise of line elevator companies, but the desire to counteract the advantages of these companies became an additional motive. By 1900 some of the associations had become so strong that there were complaints charging arbitrary coercion of individual dealers, central commissionmen, railroads and farmers. The rise of line elevators and farmers' coöperative elevators has, however, deprived the local dealers' associations of much of their former influence.

**Farmers' Coöperative Elevators.**—Many of the present-day coöperative farmers' elevators are operated substantially in the same manner as line or local dealers' elevators. In the past

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<sup>11</sup> See Chap. VIII; hedging operations of country elevators are described fully in Vol. I of the *Report on Grain Trade* by the Federal Trade Commission.

the farmers in establishing coöperative elevators, frequently underestimated the expense and risks of the grain trade; they seldom hedged their transactions, and their attempts to market grain on too narrow price margins sometimes resulted in failure. They were, moreover, in many instances opposed by local grain dealers and line elevator companies, by central jobbers, dealers and commissionmen, and by the railroads, who regarded them as "irregular." Not all the farmers have learned by experience since 1889 when the first coöperative elevator began operation,<sup>12</sup> and consequently failures are not uncommon at the present time. Usually, however, the coöperative elevator concerns are now conservatively organized as regularly incorporated companies or joint-stock associations with a capital stock varying from \$2,500 to \$20,000 and with from 70 to 225 stockholders. They usually buy grain in the same way that private dealers do and distribute their profits, although when competition is keen they sometimes pay the primary market price less the freight rate, and assess operation costs against the stockholders in proportion to the quantity of grain contributed. They sometimes operate their elevators in connection with flour, feed, coal, lumber, fertilizer, farm machinery or other local business so as to reduce expenses and increase their profits.

The farmers' elevators, moreover, frequently have the advantage of handling a larger volume of grain at a given shipping point than their competitors, for price considerations being alike, the stockholders desiring large dividends sell to their own company. The articles of incorporation in some cases provide that members may sell their grain to outside firms only upon payment to the farmers' company of one cent on every bushel so sold, and many farmers who are not stockholders, realizing the effect which the coöperative elevator has upon country prices and grading, also sell to the farmers' company. As was previously mentioned the profits of a country elevator are affected greatly by the quantity of grain handled. The stockholders, moreover, being primarily interested in the sale of the grain which they individually grow are less dependent up-

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<sup>12</sup> G. H. Powell, *Coöperation in Agriculture*, p. 127.

on elevator profits than their competitors. Farmers' elevators are especially apt to be established at points where there is but one grain buyer, and at points where, although there are several buyers, the farmers are not convinced that they receive fair prices. The Federal Trade Commission received reports from 1831 coöperative grain elevators including 100 operated by coöperative line concerns and it is estimated that there are well over two thousand coöperative elevators operating in the United States as a whole, not including coöperative grain warehouses established in the Pacific Coast States. They are particularly important in the local grain trade of Nebraska, Iowa, Montana, North and South Dakota, Minnesota and Illinois.<sup>13</sup> Nearly 20 per cent of all the country elevators reporting to the Commission—a total of 9,395—were of the coöperative type.

The principal obstacles encountered by farmers' elevators have been mismanagement and competition with line elevator companies. The handling of larger quantities of grain by the latter, and their ability to recoup at one point the profits which they sacrifice at another, gives them an advantage alike over coöperative and grain dealers' companies which ordinarily operate individual elevators. In order to overcome this disadvantage the farmers' companies have been urged to form coöperative unions.

The coöperative movement became particularly active after 1920 when grain prices dropped so low as to cause serious financial distress to many grain growers. It was then proposed not only to organize even more coöperative country elevators but to coöperate with each other and to extend the coöperated movement into the primary grain markets. The United States Grain Growers, Inc., formed under the inspiration of the American Farm Bureau Federation, at first contemplated acting in the capacity of a giant commission house at the primary markets and later the plan also embodied the organization of

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<sup>13</sup> Vol. I of *Report on Grain Trade*, pp. 40, 51; H. J. Waters in *Annual Report of State Board of Agriculture of Missouri, 1913*, p. 118.

companies or associations for coöperative financing, storage and exporting of grain.

#### OTHER LOCAL GRAIN MARKETING AGENCIES

Although the principal marketing agencies at the local grain markets are the various types of country elevators and warehouses, so-called "scoop shovelers" also purchase grain from the growers at some of the local markets. Such grain buyers arrange for railroad cars into which the grain purchased by them is loaded direct from wagons or trucks. They may be grouped into two classes; permanent and transient.<sup>14</sup> The former are usually farmers, merchants or liverymen residing in the community. The latter may be either retail dealers, liverymen and others who occasionally purchase a few carloads of grain for their own use; or professional grain buyers who appear at local markets, particularly in Texas and Oklahoma, after harvest to purchase and resell as much grain as possible. Their operations are described in a publication of the Department of Agriculture as follows:<sup>15</sup>

Owing to the small amount of money invested, the cost of operating a scoop-shovel business is less than that of the regular dealer, who must maintain an expensive plant; but, as the scoop shoveler rarely possesses a thorough understanding of grain-marketing methods, it is seldom that his scope of influence is widely extended. He soon learns that unless a large volume of grain is handled profits necessarily must be meager. On the other hand, the transient buyers not only give regular dealers considerable trouble through loss of business but often cause an appreciable loss to the farmers. In many instances, having little capital (consequently little to lose), they offer prices in excess of market justifications with the hope that before shipments reach a terminal market prices will have advanced sufficiently to afford them a profit. When the market "breaks" against them some one else must bear the loss.

This undesirable state of affairs is created in several different ways. Sometimes an arrangement is effected with a local bank

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<sup>14</sup> U. S. Department of Agriculture, *Bulletin No. 558*, "Marketing Grain at Country Points," pp. 21-23; Federal Trade Commission, Vol. I, p. 96.

<sup>15</sup> U. S. Department of Agriculture, *Bulletin No. 558*; "Marketing Grain at Country Points," pp. 22, 23.

or a prominent merchant to assist in financing shipments by depositing with them whatever capital the buyer may possess. The scoop-shoveler's checks are then honored, the bank or merchant later receiving drafts, with bills of lading attached, when shipments are made, the presumption being that the buyer's small deposit will be sufficient to liquidate any possible losses brought about by market fluctuations. Often, however, the banker discovers this amount to be insufficient, on account of unusual market depression or unsatisfactory quality of the grain, or if for some other reason payment of the draft is refused at destination. At other times the buyer arranges with the farmer to pay for his grain upon receipt of return remittance, but when the farmer attempts collection the buyer has disappeared. Often the scoop-shoveler may contract to purchase a farmer's grain at a certain figure. If the market declines before delivery is made, the farmer either finds the buyer has gone or that it is impossible for him to take the grain and pay for it. One instance was noted where a scoop-shoveler, in contracting for grain from farmers for future delivery, proffered a written contract, which at first glance appeared binding, but further scrutiny disclosed in fine type in one corner these words: "This contract shall not be dated or closed until the above price or better can be paid." This statement meant that unless the price of grain advanced to a profitable point for the buyer before the grain was delivered the contract was worthless.

There are many scoop-shovelers, including not only consumers or small dealers who come into producing territory occasionally, but also men of limited means who obtain their start in the grain business in this manner. The manager of one of the largest milling companies in the West at the present time made his entry into the grain business with a scoop-shovel. For his own protection, however, the farmer should investigate carefully the responsibility of itinerant purchasing agents before selling his grain to them.

While the activities of the scoop-shoveler occasionally cause marked losses both to regular dealers and to farmers, as well as to country bankers and merchants, at times his restraining influence upon the country dealer can not be denied. In fact, the manager of a line company operating a large number of country houses recently intimated there was little danger of his company ever seeking excessive margins, for whenever this was attempted scoop-shovelers would immediately begin buying grain at each of the stations.

So-called country track buyers also purchase grain at the local



but their earnings are mainly with country elevators rather than with individual grain growers. They purchase carloads of grain on track from local grain shippers for resale at the primary markets or direct to mills, wholesale grain dealers or others located elsewhere. Country elevator dealers have the option of consigning carloads of grain to the primary markets, of selling them to primary market buyers on "to arrive" contracts or of selling them on track at the local markets. Other factors in the local grain markets sometimes purchasing grain direct from growers, in wagon or carload lots, are the agents of mills and other converters, stock feeders, stock raisers, and local liverymen and retail feed dealers.

#### HAZARDS OF THE COUNTRY ELEVATOR BUSINESS

Although the country grain elevators are essential to the efficient conduct of the grain trade and many prosperous concerns are engaged in it, they are confronted by various hazards which are of sufficient importance to warrant at least brief mention.

1. The marketing of grain by growers continues to be seasonal in that the greater part of the crop is usually sold by them during the first three or four months after harvest. The number of growers holding their crop until later months in the crop year has increased but not sufficiently to eliminate this feature of the country elevator business.

2. The volume of grain handled at a local market frequently varies greatly from one crop year to another. This variation is substantially wider at a particular local market than throughout the grain-growing states as a whole. Droughts, frosts, crop pests or restricted acreage in particular farming regions may have comparatively little effect upon the nation's entire grain crop while greatly influencing the volume of grain handled in the regions where the adverse conditions occur.

3. Country elevators are also confronted by the possibility of different grades being assigned to grain at the primary markets than those assigned to it at the local markets. Even when uniform grading rules are applied a difference may appear when

a carload is regarded; for grading, at best, depends upon human judgment.

4. A further element of uncertainty has frequently resulted from the primary market price data received at the local markets. The price cards or bulletins, news letters, price currents or central-market trade papers, telegraphic reports, etc., obtained from the primary markets have not always reflected the actual price paid and are something difficult to interpret. All organized grain exchanges have not in the past required cash grain sales to be reported and quotation committees of some exchanges were not in a position to publish a complete record of cash grain prices. It may be noted that the Grain Futures Act contains a provision which now requires exchanges recognized as contract markets to keep a record of all cash gain as well as future contract transactions.

5. Inadequate car service has at times interfered greatly with the efficient conduct of the country grain elevator business. Most country elevators are not constructed with extensive storage capacities, but depend upon the railroads for sufficient cars to enable them to purchase and promptly ship to the primary markets all grain offered by the growers during the heavy moving season following the harvest. Freight car shortage is therefore a serious hazard both to the country elevator and the grain grower.

6. Other hazards are those which at times result from the occasional practice of entering into private and sometimes indefinite future contracts with growers; those which may arise from the storage of grain for farmers, a service which has been performed free of charge at some local markets; and those incident to excessive competition at points where various rival country elevators and perhaps also rival scoop-shovelers compete for a limited volume of available grain. At times there is also the financial difficulty of obtaining sufficient funds to pay for grain as it is offered by the growers. A financial panic or period of money stringency during the crop moving months tends to demoralize the country grain elevator business as effectively as an acute shortage of freight cars.

### THE LOCAL GRAIN MARKET IN THE PACIFIC COAST REGION

The sale of grain by the farmers of the Pacific Coast region differs from the methods prevailing throughout the central western and eastern parts of the United States in various respects.

**Local Purchasing by Exporter.**—While the grain export trade conducted through the Atlantic and Gulf ports is handled by exporters who purchase their grain at the large primary and seaboard markets, Pacific Coast exporters frequently buy grain directly from the farmers. Their agents, who are scattered throughout the local markets, purchase wheat and barley and forward it to the ports. The exporting concerns then attend to the chartering of vessels, the loading of the cargo, the securing of marine insurance, the payment of the ocean freight, and the sale of the grain to the foreign importer. It was stated by the Bureau of Statistics, Department of Agriculture, that a large part of the grain export trade of the Pacific Coast is concentrated in the hands of a few strong firms.

These exports are more or less closely connected with grain dealers located in European markets, and who represent there the men who export from the United States; this relation is in some cases reversed—some Pacific Coast exporters are representatives of European firms. The European representative of the Pacific Coast exporter may sell a given lot of wheat before the exporter buys it for shipment or the exporter may buy it first and look for the purchasers afterwards. In either case both transactions are usually made within a short time of each other, and the exporter runs less risk of a fall in price than if he held his wheat a longer time before selling it.<sup>16</sup>

The purchases made by the exporter are of particular importance to the Pacific Coast wheat and barley grower, because the grain trade of the Pacific Slope is more largely dependent upon the foreign market than that of the grain regions located east of the Rocky Mountains.

**Handling of Grain in Sacks.**—Pacific Coast grain is mainly handled in sacks rather than in bulk. This practice, which in

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<sup>16</sup> F. Andrews, "Marketing Grain and Live Stock in the Pacific Coast Region," Bureau of Statistics, *Bulletin No. 89* (1911), p. 85.

the past also prevailed in other regions of the United States, but which owing to its expensive and cumbersome nature has been largely abandoned, still persists in the Far West. Its retention is partly due to custom, but it is also due partly to the fear that it is not safe to load a vessel with bulk grain for the long voyage to European and Oriental markets. One of the conditions of Pacific Coast marine insurance policies and grain-charter parties ordinarily is that grain cargoes shall be shipped in sacks. Since the export trade is so important in the Pacific Coast grain trade, these conditions influence the methods of handling most of the grain of the Far West—domestic as well as export. The grain is sometimes sacked several times, for when received at the port warehouses it “is frequently emptied from the sacks, run through an elevator for the purposes of cleaning or mixing, and is sacked again for shipment.”<sup>17</sup>

Aside from the reasons stated above there are several others which operate counter to the movement in favor of handling Pacific Coast grain in bulk.<sup>18</sup> The change would involve the scrapping of funds now invested in flat warehouses and equipment, and a large outlay for country elevators. Opponents of the elevator system also point to the spread of from two to four cents per bushel now maintained between bulk and sacked grain; to past experience with elevators in Pacific Coast grain regions; to the advantage of sacked grain in branding and separate storage; and to the unusually large number of varieties of wheat grown in the Pacific Northwest and the prevalence of smut.

The number of country grain elevators in the Pacific Coast grain states is, however, slowly increasing. It is pointed out that although the export markets are very important in the wheat trade of the Pacific Coast, but 25 per cent of the aggregate crop is normally exported, and that it is inadvisable to maintain a system under which the entire crop is sacked in order that one fourth of it may be exported in sacks; also that

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<sup>17</sup> *Ibid.*, p. 90.

<sup>18</sup> H. T. Lewis, “The Elevator Movement in the Pacific Northwest,” *Journal of Political Economy Federal Trade Commission*, Vol. I, pp. 25–39.

the importance of sailing vessels making the voyage via Cape Horn is declining while steamers making comparatively short and rapid voyages via the Panama Canal are now handling most of the grain exported to Europe. Lower handling costs and a saving in time are advanced as fundamental reasons for handling grain in bulk through elevators. The cost of handling export grain is especially heavy because export grain is usually resacked at the ports for its ocean voyage. The sacking of grain, however, continues to be a feature of the Pacific grain trade and because of the obstacles referred to above the country elevator movement in the far western states may not for some time obtain the importance it has long attained east of the Rocky Mountains.

**Coöperative Growers' Associations.**—Some of the grain of the Pacific Slope is sold through coöperative farmers' associations. The coöperative grain ventures which have been attempted in California since 1874 have in some instances met with failure, but at present there is an organization in that state known as the Grain Growers' Association of California which claims to have caused higher prices to be paid to the growers. In Oregon, Washington and Idaho there are numerous coöperative grain warehouses, which differ from those east of the Mountains in that, while they are operated by separate local organizations, their sales are made through a central union whose agents sell to exporters, to mills and to dealers who supply mills with grain. East of the Rocky Mountains, the centralized control of grain handled by coöperative elevators made its beginning but recently.

**Price-quoting System.**—A minor feature of the Pacific Coast grain trade is that wheat and barley prices at many points are quoted in terms of 100 pounds. In Oregon, Washington and Idaho, wheat prices are quoted in terms of bushels of 60 pounds as in other wheat-growing regions of the United States, but barley is often sold by the "cental" (100 lbs.) or by the short ton (2,000 lbs.). Pacific Coast wheat when exported to England is usually sold in terms of "quarters" of 500 pounds, and barley in terms of quarters of 448 pounds gross weight.

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## CHAPTER IV

### PRIMARY AND SEABOARD GRAIN MARKETS: THE TERMINAL ELEVATOR SYSTEM

As the grain trade illustrates the manner in which a farm product grown by a large number of farmers throughout wide areas is first collected and sold at local markets, so it is also an excellent example of how such commodities are in many instances concentrated at a smaller number of large central markets before they are shipped to their final destination.

#### THE FLOW OF THE GRAIN TRADE

**The System of Grain Markets.**—Most of the grain after it leaves the farms passes through a series of markets and shipping points. (1) The local markets which were described in the preceding chapter collect the grain from the growers; (2) the primary markets of the interior collect most of it from the local markets; (3) portions of the grain shipped out of the primary markets are sold, transshipped, or consumed at the seaboard markets, which are located at the country's principal ports of distribution and exportation, (4) at secondary wholesale markets throughout the United States and (5) at central markets in foreign countries. (6) Much grain in moving out of the primary markets is, moreover, transshipped *en route* at a group of interior points where grain is transferred rather than marketed. (7) Certain quantities of grain are retailed for feed or seed purposes at retail markets located throughout the United States or in foreign grain-importing countries. Much grain, however, is not retailed, but is sold in wholesale lots to flour and grist mills, malt houses, cereal manufacturers and other large consumers.

The organized grain trade, in so far as it is conducted in

the central markets of the United States, is principally confined to the primary markets of the interior and the seaboard grain markets of the Atlantic, Gulf and Pacific coasts.

**Geographical Location of Primary Markets.**—As shown in Map No. III, a circle with its center at Peoria, Illinois, and its circumference drawn through Duluth and Wichita circumscribes all the principal primary grain markets of the United States. While their central western location places them adjacent to some of the country's greatest grain fields, there are vast grain-growing regions in the trans-Mississippi Valley, which are removed many hundreds of miles from the nearest primary market. They are located with special reference to transportation facilities, for they gather their grain supply from the thousands of local country markets. Most of them are situated either on the western heads of the Great Lakes or on the interior waterways, and all of them have been supplied with abundant railroad facilities.

From each of the primary markets numerous railroads radiate throughout the agricultural districts from which they obtain grain. Sometimes as many as twenty-five or more railroads, including many of the well-known Granger roads of the Central West, feed a single large market, and smaller quantities of grain are also received at some of these markets via lake or river. Each primary market is likewise located so that it may readily ship grain eastward or southward. The eastern and western trunk lines, the Great Lakes, and to a less extent the New York Barge Canal route, regularly carry large volumes of grain from the primary markets of the West to the inland and seaboard markets of the Atlantic Coast, and another group of railroads and certain rivers carry smaller quantities to the inland and seaboard markets of the Gulf of Mexico. The manner in which Chicago, the largest primary market, receives and ships its supply of grain is clearly shown in the balance sheet for the year 1922, reproduced in Table III.

**The Volume of Business at the Primary Markets.**—The relative importance of the primary grain markets varies widely. The receipts of wheat are greatest at Minneapolis, Kansas City,

# PRIMARY AND SEABOARD GRAIN MARKETS 61

## TABLE III

### BALANCE SHEET OF CHICAGO GRAIN (1922)

#### RECEIPTS

	Flour Barrels	Wheat Bushels	Corn Bushels	Oats Bushels	Rye Bushels	Barley Bushels
Lake .....		1,205,000			615,000	
Chicago & North West- ern R. R. ....	1,967,000	5,948,000	44,588,000	19,638,000	1,309,000	3,126,000
Illinois Cen- tral R. R. ....	287,000	6,130,000	37,760,000	14,001,000	223,000	447,000
Chicago, Rock Island & Pa- cific R. R. ...	1,337,000	6,004,000	24,292,000	9,584,000	277,000	861,000
Chicago, Bur- lington & Quincy R. R.	1,495,000	11,739,000	16,212,000	9,423,000	784,000	899,000
Chicago & Al- ton R. R. ...	349,000	3,497,000	6,347,000	3,700,000	51,000	144,000
Chicago & East- ern Illinois R. R. ....	144,000	2,015,000	6,840,000	1,831,000	54,000	17,000
Chicago Mil- waukee & St. Paul R. R. ...	5,102,000	6,407,000	32,437,000	16,727,000	1,278,000	3,072,000
Wabash R. R. Chicago Great Western R. R. ...	51,000	4,579,000	5,636,000	2,137,000	70,000	17,000
Atchison, To- peka & San- ta Fe R. R. ...	1,884,000	4,169,000	7,076,000	4,468,000	213,000	780,000
Minneapolis, St. Paul & Sault Ste. Marie R. R. ...	366,000	3,375,000	4,206,000	2,453,000	74,000	71,000
Elgin, Joliet & Eastern R. R. ....	566,000	730,000	99,000	850,000	207,000	388,000
Eastern and Southeast- ern Lines ..	.....	208,000	1,281,000	135,000	25,000	91,000
.....	181,000	1,844,000	6,497,000	2,194,000	354,000	25,000
Total receipts.	13,729,000	57,850,000	193,271,000	87,141,000	5,534,000	9,938,000
Flour manu- factured in the city (es- timated)	1,477,000	.....	.....	.....	.....	.....
In store and afloat in har- bor, Decem- ber 31, 1921	49,000	2,505,000	8,174,000	21,326,000	696,000	135,000
Grand totals..	15,255,000	60,355,000	201,445,000	108,467,000	6,230,000	10,073,000

Duluth, Chicago, St. Louis, and Omaha; those of corn at Chicago, St. Louis, Omaha, Peoria and Milwaukee; those of oats at Chicago, St. Louis, Minneapolis, Indianapolis, Milwaukee and Peoria; barley at Minneapolis, Chicago, Milwaukee and Duluth; and rye at Duluth, Minneapolis and Chicago. The aggregate



# AGRICULTURAL COMMERCE

## TABLE III

BALANCE SHEET OF CHICAGO GRAIN (1922)

### SHIPMENTS

	Flour Barrels	Wheat Bushels	Corn Bushels	Oats Bushels	Rye Bushels	Barley Bushels
Lake						
To Buffalo.	570,000	21,152,000	16,438,000	9,745,000	1,688,000	.....
To Erie.	95,000	.....	.....	765,000	.....	.....
To Port Huron.	.....	.....	175,000	100,000	.....	.....
To Fairport	72,000	.....	285,000	.....	.....	.....
To Clevel- land.	.....	.....	125,000	125,000	.....	.....
To Ogdens- burg.	.....	55,000	156,000	.....	.....	.....
To Milwau- kee.	.....	.....	62,000	.....	.....	.....
To Depot Harbor.	.....	2,129,000	9,516,000	494,000	22,000	.....
To Montre- al.	.....	1,167,000	764,000	.....	62,000	.....
To Midland	.....	648,000	583,000	.....	.....	.....
To Tiffin.	.....	405,000	4,355,000	877,000	185,000	.....
To Pt. Coi- bourne.	.....	8,229,000	6,578,000	110,000	346,000	.....
To Pt. Mc- Nicol.	.....	2,508,000	5,952,000	.....	107,000	.....
To Goder- ich.	.....	.....	380,000	.....	.....	.....
To Colling- wood.	.....	.....	634,000	.....	.....	.....
To Quebec.	.....	.....	80,000	.....	.....	.....
Totals by Lake.	737,000	36,293,000	46,143,000	12,216,000	2,410,000	.....

grain receipts of the sixteen principal primary markets in the grain receipts of the principal primary markets in the years 1905, 1913 and 1922 are shown in Table IV.

During the pre-war decade ending in 1913 the annual receipts of grain at Chicago increased 40 per cent, at Minneapolis 47.8 per cent, and at Kansas City and Milwaukee 52 per cent. The grain receipts at Duluth underwent the even more rapid increase of 172 per cent, those at Omaha 128 per cent, and those at Indianapolis 174 per cent. On the contrary the quantity of grain annually received at St. Louis, although it was in 1913 exceeded only by the receipts at Chicago, Minneapolis and Duluth, increased but 17 per cent during the decade. The increases at Louisville, Cincinnati, Wichita and Little Rock were likewise small, and the annual receipts at Peoria, Toledo, Clevel-

TABLE III

BALANCE SHEET OF CHICAGO GRAIN (1922)

## SHIPMENTS

	Flour Barrels	Wheat Bushels	Corn Bushels	Oats Bushels	Rye Bushels	Barley Bushels
Chicago & No. Western R. R.	245,000	188,000	264,000	412,000	3,000	28,000
Illinois Central R. R.	75,000	411,000	329,000	1,286,000	5,000	36,000
Chicago, Rock Island & Pacific R. R.	16,000	38,000	7,000	15,000	.....	2,000
Chicago, Burlington & Quincy R. R.	1,000	4,000	3,000	13,000	.....	2,000
Chicago & Alton R. R.	47,000	53,000	37,000	682,000	.....	30,000
Chicago & Eastern Illinois R. R.	99,000	33,000	164,000	1,201,000	9,000	6,000
Chicago Milwaukee & St. Paul R. R.	68,000	37,000	636,000	769,000	18,000	6,000
Wabash R. R.	4,000	5,000	2,000	4,000	.....	.....
Chicago Great Western R. R.	.....	1,000	.....	3,000	.....	.....
Atchison, Topeka & Santa Fe R. R.	.....	.....	.....	.....	.....	.....
Minneapolis, St. Paul & Sault Ste. Marie R. R.	.....	20,000	43,000	45,000	.....	.....
Elgin, Joliet & Eastern R. R.	.....	.....	.....	.....	.....	.....
*Eastern and Southeastern Lines...	9,910,000	13,302,000	71,823,000	57,086,000	2,945,000	3,202,000
Total shipments	11,202,000	50,385,000	119,451,000	73,732,000	5,390,000	3,312,000
In store and afloat in harbor, Decem-31, 1922	30,000	2,645,000	8,781,000	9,196,000	645,000	241,000
City consumption and unaccounted for.....	4,023,000	7,325,000	73,213,000	25,539,000	195,000	6,520,000
Grand Totals.	15,255,000	60,355,000	201,445,000	108,467,000	6,230,000	10,073,000

\*The Eastern and Southeastern Lines include the Wabash R. R. (east of Chicago), Pere Marquette R. R., C. C. C. & St. L. R. R., Michigan Central R. R., N. Y. C. R. R., P. Ft. W. & C. R. R., P. C. C. & St. L. R. R., B. & O. R. R., G. T. W. R. R., N. Y. C. & St. L. R. R., Chicago & Erie R. R. and the C. I. & L. R. R.

\*Includes 812,000 bushels in bond.

\*Includes 194,000 bushels in bond.

\*Includes 335,000 bushels in bond.

TABLE IV  
RECEIPTS OF GRAIN AT LEADING PRIMARY GRAIN MARKETS<sup>1</sup>

Markets <sup>7</sup>	Receipts (in bushels)		
	1905 <sup>2</sup>	1913 <sup>3</sup>	1922 <sup>4</sup>
Chicago....	260,675,803	337,288,000	353,734,000
Minneapolis	138,370,220	185,250,340	191,274,000
Kansas City	68,298,200	66,795,950	110,669,000
St. Louis...	60,781,698	80,498,694	103,559,000
Duluth.....	51,317,351	112,560,717	115,864,000
Milwaukee.	37,749,100	59,464,630	62,090,000
Omaha.....	34,523,500	68,574,700	76,476,000
Peoria.....	29,093,000	34,574,700	46,997,000
Louisville...	22,602,700	22,542,783	<sup>5</sup>
Cincinnati..	30,103,717	21,153,312	<sup>5</sup>
Indianapolis	9,240,500	23,975,300	35,172,000
Toledo.....	24,400,700	14,733,800	18,416,000
Cleveland...	21,981,047	13,290,463	7,548,000
Detroit.....	14,975,282	7,529,900	5,881,000
Wichita...	5,000,000 <sup>6</sup>	9,957,220 <sup>4</sup>	<sup>5</sup>
Little Rock..	4,409,200	5,513,000	<sup>5</sup>
Total.	813,642,018	1,063,602,902	

<sup>1</sup> Includes wheat, corn, oats, barley and rye. Calendar Years.

<sup>2</sup> U. S. Monthly Summary of Commerce and Finance, Dec., 1905 and 1910.

<sup>3</sup> N. Y. Produce Exchange, Annual Statistical Report; Chicago Board of Trade Annual Report, etc.

<sup>4</sup> Fiscal year 1912.

<sup>5</sup> No report.

<sup>6</sup> Approximate.

<sup>7</sup> Receipts during 1922 at St. Joseph, 26,801,000 bushels; at Sioux City 25,236,000 bushels. Figures for earlier years in table not given.

land and Detroit declined somewhat. From 1913 to 1922 receipts increased at all of the markets reporting, excepting Cleveland and Detroit, and very appreciable quantities were received at St. Joseph and Sioux City.

**Competition between Primary Markets.**—Each primary market ordinarily obtains its supply of grain from a particular grain-growing section or sections. There is, however, active competition between the various markets because there is no large district which does not have the alternative of shipping its grain to several markets, and because the grain which is ordinarily shipped to a particular center may in case of manip-

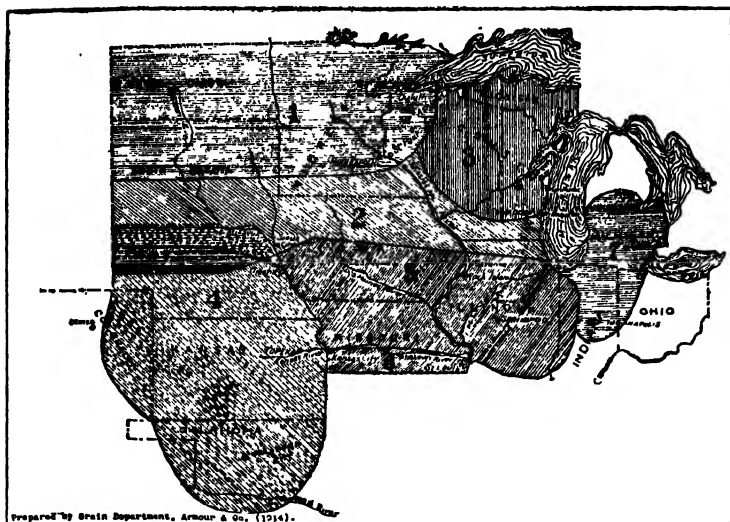
ulation of prices or extraordinary demand move to some other primary market. The relation between different productive areas and primary grain markets is shown in Map No. VI. The grain from location No. 1 usually moves to Minneapolis and Duluth, but the railroad carriers are so situated that in case prices for any reason get out of range the grain will move to Chicago. Grain produced in section No. 2 is ordinarily shipped either to Chicago or Milwaukee, but slight price variations at times draw the output of the western portion to Minneapolis or Duluth. Region No. 3 is tributary to Milwaukee and Chicago and to various smaller markets such as Ashland, Manitowoc or Green Bay. The grain produced in district No. 4 may move either to Kansas City, St. Louis, Omaha, Chicago, New Orleans or Galveston. Territory No. 5 may ship either to Chicago or St. Louis, and from the southern portion of it also to New Orleans and Galveston, and the grain from territory No. 6 usually moves to St. Louis, but may move to Chicago in case prices are badly out of line, and in recent years some grain from this region has also moved direct to New Orleans. Region No. 2 A ordinarily ships its grain to Chicago or Milwaukee, but may also ship to other primary markets north or south, and the grain produced in the area designated 4 or 5 ordinarily moves to Kansas City, St. Louis, Chicago, New Orleans or Galveston, but may also be shipped to other primary markets. The grain produced in district No. 7 usually moves either to Detroit or Toledo.

The competition between the primary markets is of special importance to the growers and local shippers of grain, for it affects the prices which they receive. In practice the prices at the various primary markets do not remain out of parity for a long period of time because certain dealers or "arbitrageurs" buy or sell at any of the grain exchanges with a view to making a profit out of such price differences as occasionally occur, but their ability to conduct such transactions on a large scale, even though no actual shipment of grain may be made, depends upon the ability of numerous producing regions to ship grain to any one of several primary markets.

**Functions of Primary Markets.**—By concentrating a large part of the country's available grain supply, the primary markets of the interior make possible an organized grain market. They are equipped with large terminal elevators where grain may be stored, cleaned, mixed and otherwise handled, where it may be properly inspected, graded and weighed, and from which it may readily be shipped to all parts of the world. They are equipped with organized exchanges where grain may at all times be bought and sold in accordance with established rules, and where speculation may be conducted in an orderly manner. By concentrating large quantities of grain and by providing a continuous market, they facilitate the maintenance of a world's price for grain. The primary markets, moreover, that are important milling or malting centers, provide a final market for some of the grain which is concentrated in them.

**Shipping Routes.**—The primary markets as a whole have in recent years shipped from 60 to 65 per cent of their receipts, the remainder being consumed locally. The proportion of the receipts shipped out of Chicago, Duluth, St. Louis, Kansas City, Omaha and Peoria is, however, greater than the average for all the primary markets, while in the case of Minneapolis, Louisville, Cincinnati, Toledo, Cleveland, Detroit, Wichita and Little Rock it is less.

The shipments may reach the seaboard and interior markets of the East over various routes: (1) The grain may move over the all-rail route, for all the eastern trunk lines conduct a grain-carrying business. (2) It may move eastward over the lake-rail route. Much grain is regularly transshipped from railway cars and elevators to lake carriers at Chicago, Milwaukee, Duluth and various smaller transshipment points on Lakes Superior and Michigan, and after arriving at Buffalo or other minor grain-receiving ports such as Erie, Ogdensburg or Fairport, is again transshipped from the lake to the rail carriers. (3) It may move to the East over the lake-canal route, the grain being transshipped to New York Barge Canal barges at Buffalo. (4) At certain Lake Michigan points grain is transported across



MAP VI.—TERRITORIAL COMPETITION IN PRIMARY GRAIN MARKETS

EXPLANATION OF NUMBERS ON MAP (Revised to March 12, 1923)

1. Tributary, as a general rule, to Minneapolis and Duluth. At extraordinary times wheat from this territory moves to Chicago.

2. Wheat from this location moves to either Chicago or Milwaukee. At times, however, western portion will go to Minneapolis or Duluth. A portion of the territory is extremely close and a slight variation will take it away from one market to another.

3. Wheat from this location is naturally tributary to Milwaukee, Chicago, Ashland, Manitowoc, or Green Bay.

4. Wheat from this location is tributary to Kansas City, St. Louis, Chicago, New Orleans, or Galveston. A slight variation in prices will take it away from one market to another.

5. Territory is tributary to either Chicago or St. Louis. Any slight variations in the market will pull from one to another. From southern portion, grain may also move to New Orleans and Galveston.

6. This territory tributary to St. Louis, unless Chicago market is out of line. Some movement also to New Orleans.

7. Wheat from this territory goes, generally, to Detroit or Toledo.

2A. Wheat from this section moves primarily to Chicago or Milwaukee, but is also quite likely to go to other markets north or south.

4 or 5. Wheat from this section moves primarily to Kansas City, St. Louis, or Chicago, but may go to other markets. At present considerable grain in the southern part of this territory goes to New Orleans and Galveston. This varies according to price variations as regards market, also as regards ocean freight differential between Atlantic and Gulf ports.

the lake by so-called "transit lines."<sup>1</sup> Two classes of vessels are used in the transit service, one consisting of ordinary grain vessels which transship grain in bulk through elevators from various points on the western to various points on the eastern shore of Lake Michigan, and the other of car ferries which carry across the lake in railroad cars loaded with grain. In either case the grain is carried to the eastern markets by rail. The shipping points include Milwaukee and smaller ports such as Manitowoc, and the receiving ports include points such as Ludington, Muskegon, Frankfort and Grand Haven, Michigan. (5) Certain quantities of American grain are exported to European markets via the Lake-St. Lawrence River route. Montreal is one of the largest eastern grain ports. Most of the receipts at Montreal, however, consist of Canadian grain.

The all-rail shipments predominate at those primary markets which are not located on the Great Lakes, and also at Chicago, which is so situated that the railroads need not make a lengthy detour in order to reach the eastern grain markets. The shipments from Chicago respectively by lake and rail are shown in Table III. The lake-rail route predominates at the various lake shipping points extending from points north of Milwaukee to Duluth for at these points the lake-rail route has a pronounced geographical advantage. At Milwaukee the shipments are more evenly divided between the lake and rail routes. The volume of grain transshipped eastward via the Erie Canal declined steadily for a number of years, less than 9,500,000 bushels being shipped from Buffalo by canal in 1913, and less than 4,500,000 bushels arriving at tidewater over the canal route. The improved barge canal route, however, transported an equivalent of 18,817,000 bushels of grain and grain products to New York in 1922. The total receipts of grain and grain products in 1922 aggregated 203,520,000 bushels, 89,199,663 bushels arriving via the all-rail route, including the grain transshipped across Lake Michigan by the transit lines, 95,491,429 via the lake-rail route, 18,817,000 by canal, and the small remainder

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<sup>1</sup> "Grain Movement in the Great Lakes Region," Bureau of Statistics (Department of Agriculture), *Bulletin 81*, pp. 30, 31.

by various river and coastwise water routes.<sup>2</sup> The average freight charges per bushel of wheat from Chicago to New York, during the years 1900 to 1913, varied from 9.60 to 11.70 cents on the all-rail route, from 4.42 to 6.68 cents exclusive of Buffalo charges on the lake-canal route.<sup>3</sup> During 1922 the average freight rates were as follows: All-rail 19.65 cents; lake and rail 11.93; and lake and canal 11.63 cents.

The movement from the primary markets to the seaboard markets of the Gulf has for some years been mainly an all-rail movement. Small quantities are shipped southward on the Mississippi-Ohio River system but from 1903 to 1915 such shipments did not exceed 400,000 bushels annually. This river movement of grain to the Gulf increased substantially during the War and subsequently improved river transportation services were provided and through rail-river freight rates were established from many central western points.

**Milling-in-transit.**—Much grain shipped to mills is handled on so-called milling-in-transit privileges, the carriers granting a through rate to final destination even though the grain is unloaded *en route* and converted into flour and foodstuffs. Certain precautions are taken to avoid the abuse of the privilege, for the through rate rightfully applies only to such weights of flour and foodstuffs as are the equivalents of the grain to which the privilege was extended subject to reasonable allowances for natural shrinkage in weight resulting from milling. The milling-in-transit privilege in case of interstate shipments is subject to supervision by the Interstate Commerce Commission. It may be granted free of charges other than the regular freight rates, or special charges may be collected, but the Commission has ruled that such charges must be reasonable and that no unfair discriminations or fraud may legally be practiced in its administration.

**The Seaboard Markets.**—The principal grain markets on the eastern seaboard are New York, Baltimore, Philadelphia, Boston, Portland (Maine) and Newport News; on the Gulf, New Or-

<sup>2</sup> New York Produce Exchange, *Annual Statistical Report* (1922), p. 9.

<sup>3</sup> *Statistical Abstract of the U. S.* (1922), p. 71.



leans, Galveston and minor grain-shipping ports such as Mobile, Port Arthur, Sabine and Pensacola; and on the Pacific Coast, Puget Sound ports, San Francisco and Portland, Oregon. Grain is also exported by lake through the Welland Canal and via the St. Lawrence River from Chicago, Duluth, Detroit and other Great Lake ports.

The large eastern seaboard markets distribute grain throughout the East, export grain to foreign markets, and act as ports through which grain exported from the interior is shipped abroad.

To accomplish these functions they are equipped with terminal elevators and organized grain exchanges in much the same way that the primary markets are equipped. Under pre-war conditions their principal grain business was gradually becoming one of domestic distribution rather than of foreign exports, for the entire grain-export trade of the United States declined from 378,686,000 bushels in 1900 to 193,786,000 in 1913. The European War has caused a heavy increase in exports, but the home needs for grain and flour have during the twentieth century as a whole increased more rapidly than the country's grain crop.

The Pacific seaboard markets, in addition to domestic distribution and foreign exportation of grain, also act as primary, and, in many instances, as local grain markets. As was described in the preceding chapter, the system of grain marketing on the Pacific Slope differs widely from the system prevailing east of the Rocky Mountains.

There are no primary markets in the interior of Washington, Oregon and California, the grain being shipped directly from the local shipping points to the seaboard markets over rail or river routes. It is there sold to local consumers, is distributed to western markets by rail or coastwise carriers, or is exported to European and Oriental markets. Some Pacific Coast grain, chiefly barley, is shipped to the eastern markets of the United States, and it is possible that somewhat larger quantities will be shipped to those markets via the Panama Canal in the future.

## ACTIVITIES AND MANAGEMENT OF TERMINAL ELEVATORS

No mechanism of the primary grain markets is so important as the terminal elevator system. It has indeed been stated that "the history of the primary market has been the history of the terminal elevator system."

**The Functions of Terminal Elevators.**—The terminal elevators are the country's greatest grain storehouses. Their principal function is to provide storage facilities for much of the vast quantities of grain which are sold by the growers during the months immediately following the harvesting seasons and most of which cannot find storage in the relatively small country elevators. Public terminal elevators store grain for their owners who are mainly grain dealers, and also for any other persons who desire to store grain subject to the charges and conditions imposed by state, and federal governments, the grain exchanges and the elevator companies. Private elevators—those connected with mills, malt houses, linseed oil companies and other industrial concerns or grain interests and not open to the public—also store great quantities of grain for the concerns which own or operate them.

Terminal elevators, moreover, facilitate the shipment of grain, for many of them have both rail and water connections and all of them are so connected with the railroads that cars arriving from or destined to any part of the country can readily be switched to or from them. The elevators are so equipped that grain in bulk can rapidly and at little cost be loaded into or unloaded from railroad cars or vessels. Some of them are specially constructed to transfer grain from railroad car to lake vessel or in the opposite directions. They also facilitate the inspection, grading, and weighing of grain, and some of them the cleaning, drying and mixing of grain. They promote the work of the grain exchanges and the various functions of primary markets which were previously mentioned (*See* page 66). The central elevators located at inland transfer points such as Buffalo, and at the seaboard markets, perform the same functions as those located at the primary markets of the interior,

but in some cases their principal use is the transfer rather than the storage of grain.

**Construction and Capacity of Terminal Elevators.**—In order to perform their various functions expeditiously it follows that the terminal elevators must be larger than the country elevators from which they obtain their supply of grain, and that they must be equipped with a view to handling and storing larger quantities of grain. Twenty-two of the elevators of Chicago, for example, have a storage capacity of one million or more bushels each, and one of them has a capacity of three million and another of 8,300,000 bushels. Terminal elevators are designed in widely varying ways, and many of those built during the last decade are models in design, equipment and construction. They are variously built of steel, concrete, brick and stone. Their equipment may be driven with electricity or steam, they may receive railroad cars alongside or within tunnels, and their storage bins may be provided within the main structure or partly within annexed storage tanks or towers. They are variously equipped with hoppers, endless-chain carriers, belt conveyors, power shovels, grain spouts, scales, cleaning machines, dryers, blowers and scouring plants.

The total elevator storage capacity of Chicago exclusive of millers and grain converters is 42,783,600 bushels, of Minneapolis 42,775,000, Duluth-Superior 35,850,000, and Kansas City 21,902,000. Buffalo, being the principal point of transfer for lake grain, has an elevator capacity of nearly 25,000,000 bushels. The elevator capacity of the eastern seaboard markets is less than that of the primary markets of the interior, because their need for vast storage capacities is smaller. Not only do they handle smaller quantities of grain, but much of the grain exported merely passes through their elevators as a means of transfer from railroad car to ocean carrier. The elevator storage capacity in bushels, of New York, exclusive of millers and converters is 6,732,000, of Baltimore 9,752,000, of New Orleans 7,572,000, and of Philadelphia 4,250,000.<sup>4</sup>

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<sup>4</sup> Federal Trade Commission, *Report on the Grain Trade*, Vol. III p. 288.

**Elevator Ownership.**—Prior to 1887 the public elevators of Chicago were mainly owned or operated by the grain-carrying railroads and by warehousemen. In either case they were operated by concerns whose sole interest in them was the warehousing or transfer of grain. About 1885, however, the railroads made rules permitting the sale of grain in cars. They allowed twenty-four hours for inspection and seventy-two hours for its removal from the cars, and their former demurrage charges were discontinued. The amount of track selling and selling by sample, and the volume of grain passing through Chicago without being unloaded then became so large that the railroads centering at Chicago and owning elevators and other expensive terminal properties there were confronted by a threatening situation. At the same time the southwest movement of the winter wheat and corn districts and the movement of export grain to the Gulf began to favor St. Louis, and the newer markets of the trans-Mississippi Valley, and the northwest movement of the spring wheat belt favored Minneapolis and Duluth. The railroads centering at Chicago, fearing the Interstate Commerce Act, which was enacted in 1887, and the probability of hostile public sentiment, did not feel able to return to the old regulations which had practically compelled the storage of grain in their terminal elevators. They therefore decided to sell or lease their terminal elevators, as well as such country elevators as they owned, to various central grain dealers. Since it would be to the interest of these dealers, both as grain dealers and as elevator concerns to fill their elevators with grain, the position of Chicago as a grain market and the grain traffic of the railroads would be maintained. By 1894 the shifting of public elevators from railroads and warehousemen to grain dealers had been largely accomplished, and thereafter the elevator concerns controlled a large share of the grain trade of Chicago.

At present most of the public elevators in other primary markets as well as in Chicago are operated by large grain dealers. Some elevators are still operated by concerns which are primarily in the business of warehousing, and the railroads, also, operate some of the public elevators at the primary and seaboard markets

and at transshipment points. Railroad ownership is confined mainly, though not entirely, to large transfer elevators used to transship grain to or from railroad cars, lake vessels, canal boats and ocean carriers.

In addition to the public elevators, there are many private elevators which do not conduct a public warehousing business. They are owned and operated principally by flour and grist mills, malting, cereal food, linseed, yeast and other industrial concerns, and by grain dealers who use them solely in their own grain business.

Since the elevators at the primary markets are owned or operated by a relatively small number of warehousemen, most of whom are grain dealers, the amount of competition within any one of the primary markets is smaller than it was in the past, when the bulk of the grain stored in the elevators was owned by a large number of dealers who did not own elevator properties. The amount of competition has, moreover, at times been further controlled at some of the primary markets and transshipment points by the formation of elevator associations, pools or combinations.<sup>5</sup> That such coöperation has been generally practiced at all the large grain markets, or that it has had a general effect upon the grain prices, has not been established. The reduced competition within the individual grain markets is largely counterbalanced by the competition which exists between the primary markets.

**Regulation by the States.**—Public terminal elevators are in some states subjected to state regulation in much the same manner that the charges and services of common carriers are publicly controlled. The railroad and warehouse laws of Minnesota *define public elevators* as "all elevators or warehouses located within the switching limits of St. Paul, Minneapolis and Duluth, and other points in the state which are now or

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<sup>5</sup> See Proceedings of N. Y. Barge Canal Terminal Commission, Vol. I; "Grain Exchanges," Hearings before House Committee on Rules on House Resolution 24, Mar. 3-7, 1914; Testimony taken by Interstate Commerce Commission Oct. 15, Nov. 23, 1906, in matter of Relations of Common Carriers to the Grain Trade, Senate Document 278, 59th Cong., 2d Sess.; and Report of Bureau of Corporations on Transportation by Water, Part II.

may hereafter be designated as terminal points in which grain is received for storage in bulk, and that of different owners mixed together or so stored that the identity of the different lots or parcels is not preserved.”<sup>6</sup> In Illinois public elevators are divided into three classes, the extent of public regulation varying for the different classes. Class “A” includes all warehouses and elevators located in cities of at least 100,000 inhabitants and in which grain is stored in bulk, and grains of different owners are mixed together, or their identity is lost. Class “B” includes all other elevators and warehouses where grain is stored in bulk and is mixed together; and Class “C” includes all other elevators and warehouses where property of any kind is stored for pay.<sup>7</sup> The grain inspection and weighing law of Missouri defines public warehouses as “all buildings, elevators, or warehouses wherever state grain inspection may be established by the commission and having a capacity of not less than 50,000 bushels, erected and operated, or which hereafter may be erected or operated, by any person or persons, association, copartnership, or corporation for purpose of storing the grain of different owners for a compensation.”<sup>8</sup> The three definitions given serve to illustrate that public elevators are more comprehensively defined in some states than in others. All the definitions, however, include the elevators of primary grain markets in which grain of different owners is stored in bulk and mixed so that its identity is lost.

The *methods and extent of the control* exercised by the states over public terminal elevators varies. It is a common practice, however, to:

1. Prohibit discrimination in charges and services.
2. Require public elevators to receive all grain offered to the extent of their capacity, subject to reasonable exceptions as to damp, musty or other grain not in proper condition for storage.
3. Prohibit the mixing of different grades or otherwise transferring grain belonging to persons other than the proprietors of the elevators.

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<sup>6</sup> Laws of Minnesota (1915), Chap. 349.

<sup>7</sup> Illinois Statutes (1913), Chap. 114, Sec. 8965.

<sup>8</sup> Missouri Laws (1913), p. 357.

4. Require the licensing of public elevators and the bonding of elevator concerns.

5. Require the posting of elevator charges at stated times and to prohibit their increase during the following year.

6. Permit grain owners and inspectors to examine stored grain at any reasonable time.

7. Establish the lien which the warehousemen has on stored grain in case of failure to pay storage or other lawful charges.

8. Place the public elevators at the primary markets under the general supervision of the state railroad and warehouse commission, public utilities commission, or other public authority, as to maximum elevator charges, the establishment of grades and grading rules, inspection and weighing fees, licensing and bonding, rules for the receipt, care and delivery of grain, rules for the issue, registration and cancellation of warehouse receipts, and certain other matters affecting the grain trade.

9. Public terminal elevators are commonly required to post or publish a weekly statement of the amount of each kind and grade of grain in store at the close of the previous week, and to file a similar statement with a specified public official. Each public warehouseman is also required to make a daily report to the same official of the following information :

The amount of each kind and grade of grain received in store in such warehouse on the previous day, also the amount of each kind and grade of grain delivered or shipped by such warehouseman during the previous day, and what warehouse receipts have been canceled, upon which the grain has been delivered on such day giving the number of each receipt, the amount, kind and grade of grain received and shipped upon each, also how much grain, if any, was so delivered or shipped and the kind and grade, for which warehouse receipts had not been issued and when and how such unreceipted grain was received by them, the aggregate of such reported cancellations and delivery of unreceipted grain, corresponding in amount, kind and grade with the amount so reported delivered or shipped. They shall also, at the same time, report what receipts, if any, have been canceled, and new ones issued in their stead as herein provided for. And the warehouseman making such statements shall, in addition, furnish the card





12. The weighmasters or grain inspectors are in some states required to make reports, either on the back of the weight certificate or on a separate blank, showing the condition of the



# CERTIFICATE *Grain Weighing Co.*

F. H. TREFORD,

FOR THE STATE OF MISSOURI.

*St. Louis,**190—*

No.	INITIAL	PLACE WEIGHED	CONTENTS	STATE WEIGHTS

*Certified Correct as Weighed in Hopper Scales.*

CHIEF STATE WEIGHMASTER.

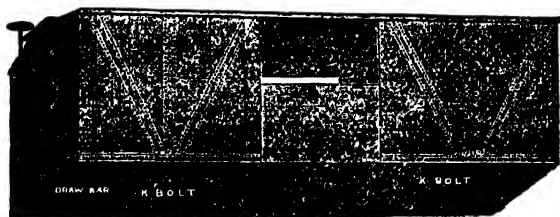
Per...

## FORM II.

grain cars weighed. A reproduction of the "report of defective and leaky condition of cars" required from the deputy weigh-

## Condition Blank.

End and \_\_\_\_\_ Side.



at Bottom of Grain Door	<input type="checkbox"/>
End of " "	<input type="checkbox"/>
Over " "	<input type="checkbox"/>
Through " "	<input type="checkbox"/>
Bulged " "	<input type="checkbox"/>

at Shifed Grain Door	<input type="checkbox"/>
End Window	<input type="checkbox"/>
Lumber Door	<input type="checkbox"/>
Side of Car	<input type="checkbox"/>
End of Car	<input type="checkbox"/>

at Door Post	<input type="checkbox"/>
End Post	<input type="checkbox"/>
King Bolt	<input type="checkbox"/>
Draw Bar	<input type="checkbox"/>
Bottom of Car	<input type="checkbox"/>

## FORM III.

masters at Chicago by the State Grain Inspection Department of Illinois is contained in Form No. 3.

13. Public grain elevators are commonly required to issue



addition require that they shall be registered with a state grain registrar at the time of issue, and be canceled by him upon delivery of the grain which they represent. The public elevators of Chicago are required to report all receipts issued within twenty-four hours to the State Registrar upon Form No. 4.

[illegible]**FORM V.**

They are prohibited from delivering any grain upon such receipts unless they are stamped or plainly marked "registered for cancellation," and after the grain has been delivered the elevator-men are within twenty-four hours required to report the canceled receipts to the Registrar on Form No. 5. The grain, moreover, may not be delivered before it has been "inspected out" of the elevator by a state grain inspector, who acts upon receipt of an "order" from the Registrar (Form No. 6). Should

it be desired to reissue any outstanding receipts, or "split" them, *i. e.*, issue several new for one outstanding receipt, the old receipts must be duly canceled and must be reported to the Registrar on Form No. 7.

The *form of warehouse receipts* is in some states fixed by law. The warehouse receipt acts of Minnesota and Illinois, for example, provide that the receipts shall contain the following provisions:

1. The location of the warehouse in which the grain is stored.
2. The date of issue.

SPECIAL RM			No 3525
No.	Date	Remarks	OFFICE OF
CANCELLED			<b>WAREHOUSE REGISTRAR OF GRAIN FOR THE CITY OF CHICAGO</b>
			To the Deputy State Grain Inspector in charge of _____ Elevator.
			You are hereby authorized to inspect out of said elevator _____ bushels of _____
			in account of _____ the Warehouse Receipts for same having been stamped "Registered for Cancellation."
			This order must be held as your authority for above shipment.
			Very respectfully, <i>[Signature]</i>
<b>This Order MUST BE</b>			<i>[Signature]</i>
Sent to STATE INSPECTOR at _____			KRM:ms
Elevator IMMEDIATELY.			

FORM VI (front).

3. A consecutive number.
4. A statement whether the grain received will be delivered to bearer, to a specified person, or to a specified person or his order.
5. Reference to the lawful rate of storage charges.
6. A description of the goods or packages stored and the quantities.
7. A statement to the effect that the original grain or grain of the same grade will be delivered upon return of the receipt properly endorsed and upon payment of charges due.
8. The signature of the warehouseman or his agent.

## AGRICULTURAL COMMERCE

9. If the receipt is issued for goods of which the warehouseman is owner, either solely or jointly or in common with others, the fact of such ownership.

10. If negotiable, a statement of advances made and liabilities for which the warehouseman claims a lien.

SHIPMENTS ON THIS ORDER			
_____ 191_____	bu.	_____ lbs.	_____ cars
_____ 191_____	bu.	_____ lbs.	_____ cars
_____ 191_____	bu.	_____ lbs.	_____ cars
_____ 191_____	bu.	_____ lbs.	_____ cars
_____ 191_____	bu.	_____ lbs.	_____ cars
_____ 191_____	bu.	_____ lbs.	_____ cars
DEDUCTIONS ACCOUNT OF REGISTERED BALANCES OR REISSUES			
_____ 191_____	bu.	_____ lbs.	
_____ 191_____	bu.	_____ lbs.	
Total _____		bu.	_____ lbs.
_____ Deputy State Grain Inspector			

FORM VI (back).

11. A statement to the effect that the identity of grain stored in special bins will be preserved.

These statutes provide that other provisions may be contained in a warehouse receipt, but that such provisions may not be in violation of any laws of the state and may not release the warehouseman from the exercise of reasonable care. In addition to the direct requirements of the Illinois statute, the elevators of Chicago

were by order of the Railroad and Warehouse Commission, issued September 7, 1911, required to print or stamp upon their receipts the words: "This receipt should be reported and registered with the Registrar of the Illinois Grain Department of the Railroad and Warehouse Commission within 24 hours after its issue."

A typical Minneapolis negotiable warehouse receipt, is reproduced in Form No. 8.

[illegible]

**FORM VII.**

**Regulation by Grain Exchanges.**—The terminal elevators of the primary markets are regulated not only by the states, but also by the grain exchanges under whose auspices most of the grain trading at these markets is conducted. While elevator rules of the exchanges differ, those of the Chicago Board of Trade may be regarded as typical. The exchange rules applicable in Chicago divide public elevators into two classes: (1) regular elevators, the grain of which is deliverable upon Chicago Board of Trade contracts, and (2) elevators not regular, the

grain of which is not so deliverable. In order that elevators may be declared regular they must conform to the following code of rules:

1. Their proprietors or managers must be of unquestioned financial standing and credit.

2. Regular elevators must be so situated that they may be conveniently approached by vessels of ordinary draft and must be connected with one or more eastern railroads.

3. They must be provided with modern receiving, handling and shipping appliances, and storage charges must comply with

Secretary.	<p style="text-align: center;">ELECTRIC STEEL ELEVATOR CO. ELECTRIC STEEL ELEVATOR.</p>
Countersigned.	<p>Warehouse receipt No. 2264.                      MINNEAPOLIS, MINN. .... 19 ..</p> <p>The Electric Steel Elevator Company, has received in store, in its elevator known as electric steel situated at 26th Avenue SE. and 5th Street, in the city of Minneapolis, Minnesota, for storage from .....</p> <p>..... owner, .....</p> <p>..... Bushels of .....</p> <p>Which has been duly inspected by a duly authorized inspector of grain appointed by the State Railroad and Warehouse Commission of Minnesota, and has been graded by said inspector as No. .... and is that grade. Said grain or an equal amount of grain of the same kind and grade is deliverable upon the return of this receipt properly indorsed by the owner above named and the payment of all lawful charges; in case of grain stored separately in a special bin, at the request of the owner or consignee, the identity of such grain will be preserved while in store and said grain will be delivered as such separate lot or parcel, in accordance with law, upon surrender of the receipt. Loss by fire, heating, or the elements is at owner's risk.</p> <p>The Electric Steel Elevator Company conducts said elevator as a public terminal warehouse and receives and stores therein grain of others for hire.</p> <p>.....bushels .....grade.                      ELECTRIC STEEL ELEVATOR CO. By.....</p>

FORM VIII.

the maximum charges established in the regulations of the Board of Trade.

4. They must coöperate with the warehouse receipt registration system provided by law.

5. They must promptly report damage to grain in store.

6. In case of change of condition or evasion of Board requirements, they may at any time be removed from the list of regular elevators.

7. Certain special rules are provided for elevators storing flaxseed.

8. Regular elevators must permit duly authorized exchange committees to examine their books and records in order to ascertain the stock of grain and flaxseed in store.

9. Their warehouse receipts must not voluntarily be made regular for delivery upon other exchanges.

10. All grain received in or shipped out of them must be weighed by the official Board of Trade weighmaster.

The Board of Trade may in case of emergency declare any elevators, vessels, or other places in Chicago suitable for storage to be temporarily regular. It also regulates the life of the warehouse receipts accepted for regular deliveries; it publishes the receipts of all regular elevators; and it posts any irregularities which may arise.

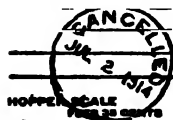
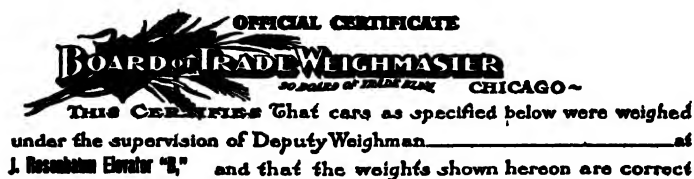
The Board operates a "Grade Sampling and Seed Inspection Department," which in coöperation with the state grain inspectors, as far as practicable, obtains samples of all graded grain stored in elevators or arriving in cars. It maintains standard grain samples, it takes up with the state inspection department any instances of improper grading of grain which it may discover, and it grades flaxseed in accordance with grades and grading regulations adopted by the Board.

The Chicago Board of Trade also maintains a Weighing Department and a Custodian Department, both of which are under a Chief Weighmaster and Custodian. The former department weighs the grain shipped into and out of the elevators and issues weight certificates. The custodian service which has been extended to nearly all important elevators keeps a record of Board of Trade weights, issues certificates showing the weight of grain unloaded from cars into elevators, prevents the "loading out" of grain until the elevator manager surrenders the properly indorsed certificates for cancelation, and cancels certificates to cover the amount of shrinkage incidental to the handling, cleaning and clipping of grain and any variations between the weight of grain at the time it is unloaded and when it is shipped out of the elevators. Copies of the weight and



custodian certificates issued under the jurisdiction of the Chicago Board of Trade are reproduced in Forms 9 and 10.

The extent to which terminal elevators are regulated by the grain exchanges depends somewhat upon the amount of control exercised by the states. When the states perform the weighing, inspection, and grading of grain, and the registration of warehouse receipts, and when they extensively regulate the form of warehouse receipts, the keeping of records, the filing of reports, and the liabilities, duties, and facilities of elevators, the elevator rules of the exchanges are less comprehensive than in states where there is little public control.



*H. H. G. W.*

#### FORM IX.

It is for this reason that the exchanges at the seaboard markets regulate the grain elevators in greater detail than do the exchanges at the primary markets of the interior. The New York Produce Exchange, for example, provides inspectors to perform the inspection and grading of grain, weighmasters to do the weighing, and a registrar to keep account of the issue and cancellation of the receipts issued by regular elevators and of all grain received and delivered at such elevators. The exchange establishes the grades and grading rules of the port in so far as official standards have not been established by the U. S. Department of Agriculture; it regulates the mixing of

grain ; it provides for daily elevator reports, for the examination of stored grain by its owners or by inspectors, and for immediate notice of grain in poor condition.

The form of warehouse receipts, which in many of the primary markets is established by state laws, is in New York determined by the Exchange. Instead of one general warehouse receipt for grain stored in bulk and the identity of which is lost, various forms are issued in New York. The regular New York receipt for graded grain stored in individual elevators is shown in Form No. 11, and is similar to receipts required in the western grain states. A different receipt is issued when

**OFFICIAL CERTIFICATE**  
OF THE  
**Department of the Board of Trade**  
OF THE CITY OF CHICAGO

Q 34587

Chicago,

Central Elevator A

*I Hereby Certify, That this day at—* ..the contents  
of the car specified below was unloaded under the supervision of this Department which will not be  
loaded out except upon surrender of this receipt for cancellation as provided in the rules and regula-  
tions of the Board of Trade of the City of Chicago, governing the Custodian Department.



H. A. FOSS, CUSTODIAN

FORM X.

graded grain is delivered into a "system" of two or more elevators operated by one warehouse concern. Such a receipt, a reproduction of which is shown in Form No. 12, does not specify the particular elevator in which the grain is stored. A third kind of warehouse receipt is issued for grain stored in the transfer elevators owned by some of the railroads centering at New York. This receipt, a copy of which is reproduced in Form No. 13, permits delivery afloat at elevators' option and is issued in accordance with an agreement between the New York Produce Exchange and the railroads.

**Federal Regulation.**—Elevators used in connection with the interstate transportation of grain are subject to control by the

Interstate Commerce Commission. In practice the Commission has confined itself mainly to the prevention of undue discrimination in so-called elevator allowances, which the railroads sometimes pay to elevator concerns at transfer points for the transshipment of grain. The allowances may be in the form of so much per bushel or one hundred pounds of grain handled, of a lease of railroad elevators to the concerns free of charge or at favorable terms, or in some other form. The United States Supreme Court has upheld the payment of reasonable allowances for services rendered, but the Interstate Commerce Commission has the power to prevent undue discrimination in the payment of any allowances for elevation, transfer, mixing, cleaning, clipping, drying, weighing, storage, "loading out," or other interstate elevator service.<sup>11</sup>

The Department of Agriculture also became a factor in the regulation of grain elevators under the United States Warehouse Act of August 11, 1916, as amended July 24, 1919 and February 23, 1923. This act, which applies to elevators in warehouses where grain "is or may be stored for interstate or foreign commerce or if located within any place under the exclusive jurisdiction of the United States in which grain may be stored" is voluntary or optional in its application. A warehouse or elevator, even though used for the storage and handling of grain moving in interstate or foreign commerce, is not subject to the terms of this act unless the concern operating it voluntarily makes application to the Secretary of Agriculture to declare it a "federal warehouse." The act specifically states, also that the provisions contained in it are not to interfere with state laws or ruling of state commissions concerning grading and standards.

Upon application, the Secretary of Agriculture may issue a license to an elevator owner or warehouseman entitling him to act as a "federal warehouseman." A reasonable charge may be made for every examination or inspection of an elevator or warehouse made upon such application, and if a license is

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<sup>11</sup> See 222 U. S. 42. For I. C. C. decisions see 12 I. C. C. Rep. 112, 15 I. C. C. Rep. 326, 17 I. C. C. Rep. 192, and 18 I. C. C. Rep. 664.

granted an annual fee not exceeding two dollars is charged for each license or renewal. The elevator or warehouse when so licensed must carry out all the provisions of the Warehouse Act and of the Federal Grain Standards Act which will be discussed in a subsequent chapter dealing with grain inspection and grading.<sup>12</sup> It is also subject to regulations as to the duties of a federal warehouseman prescribed by the Secretary of Agriculture.

A federal warehouseman is required to file an approved bond in which he agrees to abide by State and Federal regulations. He is prohibited from discriminating between persons desiring to avail themselves of elevator or warehouse facilities and is required, so far as available capacity permits, to accept all agricultural products of the kinds customarily stored.

The issue of storage receipts is required subject to a code of regulations. The issue of other than original receipts is prohibited except in case of a lost or destroyed receipt when a new receipt may be issued in compliance with federal or state statutes. Delivery of stored commodities is compulsory on demand either of the holder of the receipt or the person who stored them when such demand is accompanied with an offer to surrender the receipt, if negotiable, with proper endorsements, to satisfy the warehouseman's lien, and to sign an acknowledgment of delivery. Upon delivery each receipt is to be canceled. Every licensed warehouseman, moreover, is required to keep correct records of all grain stored and withdrawn and all receipts issued returned and canceled and to make reports to the Secretary of Agriculture concerning the condition, contents, operation and business of each federal warehouse or elevator.

The contents of receipts issued by federal warehousemen are also defined under the United States Warehouse Act. Their written or printed terms shall disclose: (1) the location of the elevator or warehouse; (2) the date of issue of the receipt; (3) a consecutive number; (4) whether the stored grain will be delivered to bearer, to a specified person, or his order; (5)

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<sup>12</sup> Chapter XVI.

the rate of storage charges; (6) the quantity of grain stored and its grade in accordance with the standards which have been promulgated by the Secretary of Agriculture; (7) a statement to the effect that the receipt is issued subject to the terms of the United States Warehouse Act and the regulations prescribed under it; (8) the fact of ownership in case the receipt covers grain owned by the warehouseman either solely or jointly with others; (9) the amount of known advances made and of liability incurred for which a lien is claimed; (10) such other conditions as may be lawfully required by the Secretary of Agriculture, and (11) the signature of the warehouseman or his agent.

The United States Warehouse Act applies not only to grain elevators or warehouses, but also to warehouses in which wool, cotton, tobacco, flaxseed and other farm products are stored in interstate or foreign commerce or in places which are under the exclusive jurisdiction of the federal government. An amendment of February 23, 1923 authorizes the Secretary of Agriculture to define the term "agricultural products."

**Sources of Elevator Profits.**—The income of the terminal elevator concerns is derived from different sources. As public warehousemen they are paid storage charges, the maximum of which is limited by the states or by the grain exchanges. At Chicago, for example, the maximum storage charges at "regular" elevators are  $1\frac{1}{4}$  cent per bushel for the first ten days and  $\frac{1}{20}$  of a cent per day thereafter. Grain stored in public elevators at some markets may also be placed into separate bins upon request of the grain owner, in order that it may be cleaned, mixed, dried or otherwise improved, and the warehousemen are entitled to pay for such services. The income from this latter source is small, however, because grain owners seldom avail themselves of this privilege. The profits of the warehousemen, who deal in grain, are mainly derived from the sale, storage and handling of grain which is owned by them. As grain dealers they obtain a profit by purchasing grain at one price and selling it at a higher price. They also mix grain in their private elevators or in private bins, so as to raise the grade of a part of the poor grades of grain purchased from the

# REGULAR WAREHOUSE RECEIPT FOR GRADED GRAIN

No..... Kind of Grain.....  
 This Grain is subject to our advertised Bushels.....  
 rates of storage Grade.....  
 ..... Date....., 19.....  
 Received in..... Stores.....  
 From..... Bushels  
 of..... subject  
 only to the order hereon of.....  
 and the surrender of this receipt, and payment of charges.

It is hereby agreed by the holders of this receipt  
 that the Grain herein mentioned may be stored with  
 other Grain of the same quality by inspection, in ac-  
 cordance with the Rules and Regulations of the New  
 York Produce Exchange. Loss by Fire or heating at  
 owner's risk.

FORM XI.

*Regular Warehouse Receipt for Graded Grain*

.....*Warehouse Company*  
 Kind of Grain.....  
 No..... New York, ....., 19.... Bushels.....  
 Grade.....  
 Received in the Grain Store System of this Company  
 From.....  
 .....Bushels  
 of.....subject  
 only to the order hereon of.....  
 and the surrender of this receipt and payment of charges.

It is AGREED by the holder of this receipt that the grain herein mentioned may be stored, and shall be considered to be and treated as if it were actually stored, with all other grain in said System of the same grade by inspection, in accordance with the rules of the New York Produce Exchange, and that delivery under this receipt may be made of grain of the same grade out of any of the warehouses in said System. In case of loss or damage by fire in any part of said System, so much of said grain as shall bear a like proportion to this receipt as the lost or damaged grain of the same grade shall bear to all grain of like grade in this System of warehouses at the date of any such fire, shall be adjudged lost or damaged; and the obligation to deliver it under this receipt, except, as salvage, canceled; loss by fire or heating at owner's risk.

It is also AGREED that this grain is subject to the payment of our advertised rates of storage, and that accrued storage must be paid April 30th and October 31st in each year, and if not so paid, an extra charge of  $\frac{1}{4}$  cent per bushel shall be made.

FORM XII.

.....*Regular Warehouse System Receipt for Graded Grain*.....

COUNTERSIGNED

No. ....

RAILROAD CERTIFICATE FOR GRADED GRAIN, QUANTITY GUARANTEED

NEW YORK

GRADE

OFFICE OF THE

.....*Railroad Company*

New York, ..... 19.....

THESE PRESENTS CERTIFY THAT

The.....Railroad Company  
has received at.....and will deliver the below-mentioned grade  
and quantity of Grain in accordance with the rules of the New York Produce Exchange  
and of the Railroad Companies, as the same have been agreed to by the said company  
(insert quantity and grade)  
.....for account of.....aid deliverable to..... or order,

on payment of charges accrued subsequent to the date hereof.

.....*Bushels* }

FORM XIII.



farmers or country dealers. Grain stored in elevators is subject to at least two inspections—an “in-inspection” at the time it is loaded into the elevators, and an “out-inspection” at the time it is “loaded out”—and this practice enables the grain dealers to make a profit by mixing the grain in the elevators.

The mixing of grain under conditions of fair inspection and grading is not wholly objectionable, for it benefits farmers and dealers alike by providing a market for the lower or “off grades” of grain. The cleaning and drying processes, moreover, may at times result in a real improvement of the mixed grain. It is objectionable, however, when under conditions of careless or unfair inspection and grading, exorbitant profits result. It is objectionable, also, when the low grades of wheat are unfairly scoured so that “the evidence of some of its imperfections, such as sprouts, mold and must, are removed or disguised and unsound wheat is made to appear better than it really is. The miller prefers to have the grain come to him in its natural state, so that he can more readily see the character of the wheat that he is buying.”<sup>13</sup> The evils of unfair mixing are gradually diminishing as state inspection and grading at the primary markets is being improved, and under the Federal Grain Standards Act, grain at the terminal markets is now graded by licensed graders who are subject to uniform regulations and apply uniform grain standards.

Profits may also result from undue “dockage” in weight to cover impurities in the grain purchased from farmer or country dealer. Not only may the screenings resulting from cleaning in the terminal elevators be sold, but in the past there have been instances in which the weight of grain shipped out of a primary market was greater than that of the grain received. In the course of a decade, the grain shipments out of one of the western primary markets exceeded the receipts by over twenty-six million bushels. The evils of undue dockage have now been mainly prevented, for dockage at present is more strictly controlled by the

<sup>13</sup> “Wheat and Flour Prices from Farmer to Consumer,” *Bureau of Labor Statistics*, p. 32.

state grain inspectors or the grain exchanges, and is also covered in the grading regulations prescribed by the Secretary of Agriculture in accordance with the terms of the U. S. Grain Standards Act.<sup>14</sup>

There are many banks which readily accept terminal elevator receipts accompanied by insurance policies or certificates as collateral for loans. The elevator concerns may, therefore, by storing grain which they own in their terminal elevators, obtain funds with which to purchase more grain and in that way increase their profits as grain dealers. To protect these profits against loss resulting from destruction by fire they insure the grain. To protect them against loss resulting from fluctuation in prices they "hedge" in the speculative market by selling future contracts to cover grain which they have on hand, and buying future contracts to cover grain which they have contracted to deliver but which they have not as yet purchased.<sup>15</sup>

#### THE PURCHASE AND SALE OF GRAIN AT THE PRIMARY MARKETS

Though some of the grain shipped to the primary markets is disposed of by private sale, the grain trade in these markets is largely conducted in accordance with the trading rules of the grain exchange. The grain consigned to the primary markets for sale may be sold a number of times before it finally reaches the consumer. It is sold by the country elevator companies to the central elevator concerns and other grain jobbers or dealers, to exporters, or to consumers. All of the grain, except that sold by the country elevators to consumers, is again sold by the central elevator concerns, exporters and other grain dealers. Thereafter it may be repeatedly sold, for there are grain dealers and speculators who buy and sell whenever the market warrants, or seems to warrant a profit. The negotiable warehouse receipts of the terminal elevators, which represent actual grain or the delivery notices which specify ware-

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<sup>14</sup> See Chapter XVI.

<sup>15</sup> For discussion of hedging, see Chap. VIII.

house receipts when properly indorsed may change hands many times before the grain is shipped out of the elevators.

Carloads of grain are sometimes "scalped" in the cash grain markets, although there is no general agreement among grain dealers as to exactly what a "scalping" transaction may include. It is generally understood that the purchase of a carload of grain and subsequent resale in the same market but a short time after purchasing it without moving it to an elevator is a scalping transaction, but there is no agreement as to how much farther the term may be extended. The Federal Trade Commission in its grain investigation refers to a Minneapolis operator who defined scalping as "buying to resell on the same market; that is, a scalper is a man that buys in the market to resell in the market. If he buys it there to ship to some other market, knowing the difference, he is not a scalper but a merchant. But a man that just picks up a car here, where two salesmen would get together and swap cars to profit out of it, that is scalping." The commission itself defines scalping as follows:

A car of grain is considered to have been scalped when it has passed through the hands of one or more middlemen other than the consignee in the same market. Prior to delivery on either a 'to-arrive' or a future contract, or prior to a delivery to a concern or its agent engaged in storing, conditioning, converting or shipping grain.<sup>16</sup>

**The Purchase of Grain from Country Elevators.**—The sale of grain by country elevators to the primary markets is made either on consignment or by direct sale to central market buyers. Under the consignment plan, independent, local dealers, farmers' coöperative elevator concerns, individual farmers or other local shippers consign their grain to central commissionmen. Line elevator concerns may also consign to central commissionmen but usually have their own primary market representatives who sell the grain shipped from the country elevators on the floor of the grain exchange. The commissionman receives a

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<sup>16</sup> *Report on The Grain Trade*, Vol. III, p. 252.

commission of so much per bushel, in the case of wheat or rye not less than  $1\frac{1}{2}$  cents, of corn or barley 1 cent, and of oats  $\frac{3}{4}$  cent, or other commissions as determined by the grain exchange. His chief services are the selling of the grain consigned to him and the safeguarding of his customers in all matters incident thereto, such as inspection and grading, dockage, weighing, freight charges, switching, storage cleaning and conditioning and insurance. He also is a means of supplying country elevators with credit, for he commonly permits them to draw against him for as much as 80 or 90 per cent of the value of the grain consigned to him. The country dealers do this by attaching to the railroad bills of lading, drafts drawn on the commissionman, and depositing them in country banks. Sometimes, the commissionman also advances funds to country elevator concerns upon an open account, without requiring the deposit of collateral. Having sold and delivered the grain consigned to him, the commissionman renders an Account of Sales to the country shipper, Form No. 14, indicating a typical account rendered for grain sold "on track."

Grain commissionmen also perform various functions not directly incident to the sale of grain for country elevators. They supply country shippers with market information; they render assistance in procuring freight cars from the railroads; they buy or sell future contracts when country grain buyers desire to hedge and sometimes they supervise the operations and accounts of country elevators, and on request obtain managers for them.

The grain consigned to commissionmen is mainly sold on a sample basis, the grain usually being either "on track" or "in store." In the former case the grain is sold while in the cars which are held on sidings awaiting sale; in the latter, the grain has been unloaded from the cars and is stored in terminal elevators. Commissionmen, however, also handle "to arrive" sales for country shippers. In this case the grain is sold before the arrival at the terminal market and the sale is usually made on the basis of grade, final settlement being contingent upon official inspection and grading at the terminal market.

When handling "to-arrive" transactions the commissionman usually takes title to the grain and actually becomes a grain dealer.

Grain sold to the primary market by direct sale is sold either "on track" at the country shipping joint or "to-arrive" at a terminal grain market. The local "on-track" sale is an f. o. b. country station transaction in case of a direct sale, and is not to be confused with consigned grain sold "on track" at the terminal markets. Local "on-track" sales are usually, though not always, made on the basis of grades and are therefore usually contingent upon terminal market grades and weights. Much grain is sold direct to private market buyers on "to-arrive" contracts which provide that the grain is to be shipped or is to arrive at the terminal market within a specified time in the future, usually 10, 15, 20 or 30 days. Such sales are also in most instances based upon grades and are contingent upon official grading at the terminal market. Some of the larger grain exchanges endeavor to maintain separate to-arrive markets. The tendency of both local "on-track" sales and "to-arrive" sales has been to increase private cash grain trading off-exchange and the exchanges have therefore extended their trading regulations in an endeavor to include these transactions.

**The Sale of Grain Stored in Terminal Elevators.**—The methods of selling the grain which has left the hands of the country shippers and is stored in the terminal elevators at the primary markets are various:

1. It may be sold through brokers on the exchanges in the primary markets, upon payment of prescribed brokerage commission charges. Such sales may be made for immediate or future delivery, and they may be made by sample, by grade, or by sample and grade combined.

2. The grain stored in elevators at the primary markets may be sold on the seaboard exchanges. The terminal elevator companies have certain brokers representing them in the seaboard markets, the brokers being supplied with samples of the standard grade of wheat, corn and other grains which they are instructed to sell. The brokers in this way sell some of the grain

Folio..... Duluth, Minn., .....19.....

Account Sales by COMMISSION DEPARTMENT,

For Account of.....

Car	Initials	Contents		Date of Sale	Gross Weight	Dockage	Net Bushels	Price	Amount
		Grade	Dockage						
		Freight, Inspection and Weighing, Switching Reinspection Storage Insurance Commission							
		Days' Interest at      per cent.							
		Net Proceeds Advanced							
		" "							
		Balance							
	E. & O. E.						TOTAL CHARGES		

FORM XIV.

placed at their disposal to millers who are represented on the port exchanges, but more of it to eastern distributing and exporting grain dealers. The dealers who distribute grain throughout the East and who obtain most of their supply in this way, sell the grain mainly to millers and to local grain and feed concerns by means of salesmen and mailing cards. They usually sell the grain in transit and then reconsign the cars to buyers from the railroad reconsignment points to which the carloads of grain had originally been shipped. The eastern grain exporters, who also obtain most of their supply from the terminal elevators of the primary markets, fill foreign orders or sell their grain through brokers on the exchanges of the leading British and Continental European grain markets. Having received notice of acceptance, they contract for ocean freight with steamship lines or chartered ocean carriers, and at the time of shipment they contract for marine insurance to protect the grain which they are exporting.

3. Grain which is exported directly from the primary markets by the terminal elevator concerns or by exporting companies is sold through brokers on the European exchanges or shipped to fulfill orders obtained privately in the same way that the grain exported by eastern dealers is sold. Much export grain, however, is jobbed by primary market export concerns, and it is sold by them to other exporters—especially to exporters located at the seaboard markets—who in turn handle the actual export transaction. A primary market dealer exporting grain direct to foreign buyers may arrange on a commission basis to have a seaboard exporter insure and store his grain awaiting shipment, contract for ocean freight and marine insurance and otherwise see that the grain is properly forwarded.<sup>17</sup> There are also regular forwarding agents at the ocean ports who, upon payment of a commission, will see that his grain is forwarded to destination, or he may have a salaried representative at the port through which he ordinarily exports.

4. Some grain is also sold privately in the central markets.

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<sup>17</sup> S. Harris, "Methods of Marketing the Grain Crop," *The Annals of the American Academy of Political and Social Science*, (Sept., 1911), p. 57.

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## CHAPTER V

### PRIMARY AND SEABOARD GRAIN MARKETS (CONCLUDED)

Two important phases of the grain trade as conducted at the terminal markets of the United States which have thus far been referred to but briefly are (1) grain exporting and (2) the determination of grain prices.

#### THE GRAIN EXPORT TRADE

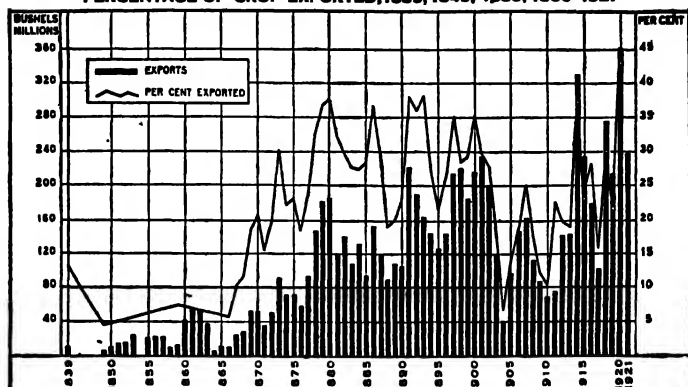
**The Grain Export Fundamentals.**—The fundamental conditions upon which grain exports are based are principally threefold. First, the United States has for many years produced a surplus of grain, particularly of wheat, over and above domestic requirements. This surplus which in a general way is measured by the percentage of the yearly crop exported to foreign markets and by the combined foreign shipments of grain and grain products as graphically shown in the case of wheat exports throughout the period from 1839 to 1921 in diagram No. II. There was a marked decline during the decade preceding the war and then a heavy increase. The trend of the future is uncertain, but it is probable that when world production, foreign market requirements and prices become fully adjusted to normal conditions, it may again be more in line with the pre-war period 1903 to 1913.

The coarse grains have never entered into international commerce on so large a scale and, except in the case of rye during and since the war, exports from the United States comprise a comparatively small percentage of the total crop. The percentages exported in 1913, 1916 and 1921 are shown in table No. V.

Second, there has for many years been a demand for American wheat and this has made it feasible to produce a surplus. The

# PRIMARY AND SEABOARD GRAIN MARKETS 105

**NET EXPORTS OF WHEAT FROM THE UNITED STATES; 1839, 1849-1921  
AND  
PERCENTAGE OF CROP EXPORTED; 1839, 1849, 1859, 1866-1921**



Prepared by U. S. Department of Agriculture.

**DIAGRAM II.—NET EXPORTS OF WHEAT FROM THE UNITED STATES AND  
PERCENTAGE OF TOTAL CROP EXPORTED.**

**TABLE V**

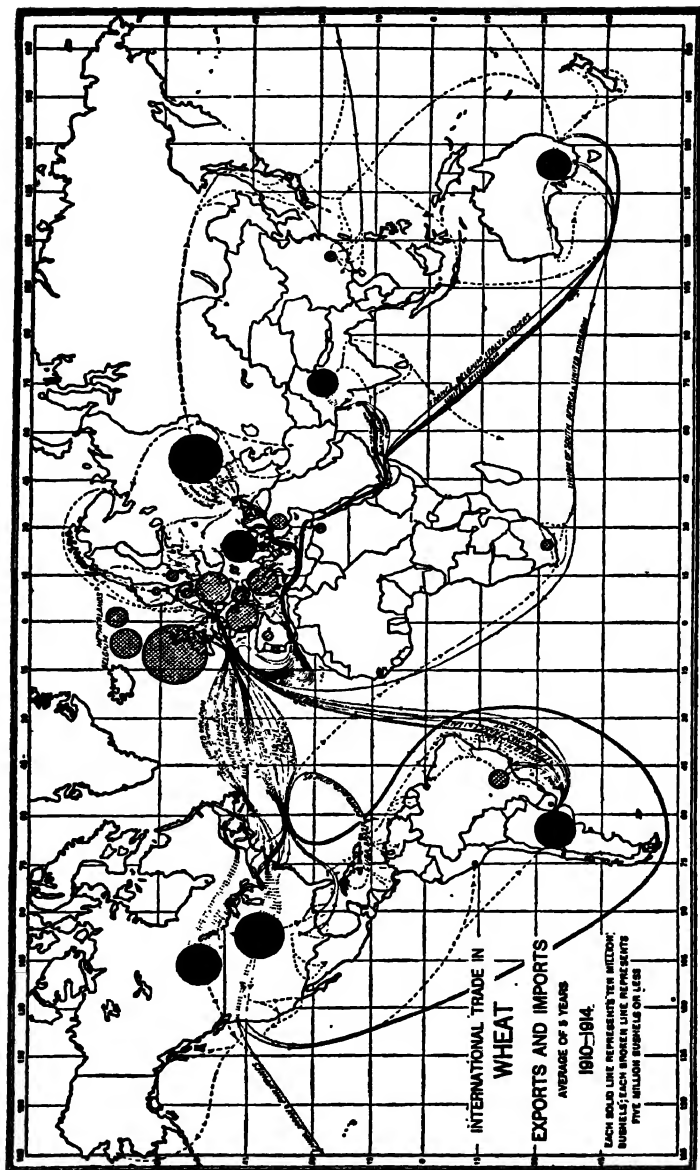
**PERCENTAGE OF COARSE GRAIN CROPS EXPORTED FROM UNITED STATES.<sup>1</sup>**

Year	Corn	Rye	Barley	Oats
1913	1.7	4.9	7.2	(1)
1914	2.1	32.4	12.3	8.4
1921	4.3	52.0	17.1	0.5

<sup>1</sup>Less than amount imported.

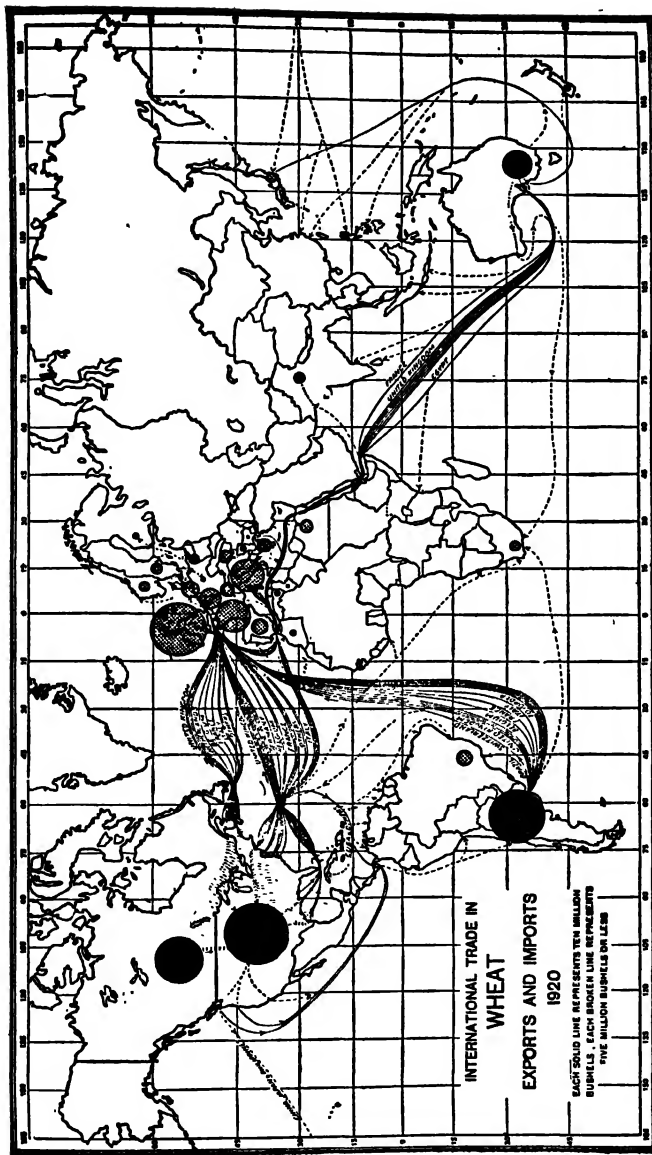
As computed by Federal Trade Commission in *Methods and Operations of Grain Exporters*, Vol. I, p. 17.

demand has come principally from Great Britain and the Western European countries which do not produce sufficient wheat for home requirement and regularly import wheat and flour from the United States and elsewhere. The United Kingdom, France, Italy, Switzerland and Portugal, the Netherlands and Belgium, Norway and Sweden and Germany have been the principal European markets; and substantial quantities have also been



Prepared by U. S. Department of Agricultural.

MAP VII.—THE INTERNATIONAL TRADE IN WHEAT, 1910-1914.



Prepared by U. S. Department of Agriculture.  
MAP VIII.—THE INTERNATIONAL TRADE IN WHEAT, 1920.

exported to certain non-European countries such as China and Japan.

The third export fundamental, but one closely related to the production of a surplus and the availability of foreign markets, is the maintenance of a price difference between the United States and the grain importing countries sufficiently wide to make it profitable to export grain. The difference must be sufficient to account for the transportation and other expenses incident, and in the long run yield a profit to the grain exporters. The spread between Chicago, New York and Liverpool as measured in a general way by annual average prices which are not comparable with exact precision but which indicate wheat price differences between Liverpool and the United States has gradually narrowed.

The international trade of the United States and of the world as a whole during the pre-war period, 1910-1914, and the post-war year 1920, is described graphically in maps numbers VII and VIII. The maps clearly indicate the regions of surplus production, the principal world markets to which they export and the prevailing trade routes.

**Grain Export Orders.**—Export orders in the American grain export trade have not been fully standardized but their essentials may be briefly defined as follows:

1. The quantity of grain ordered is stated in terms of bushels or quarters of 480 lbs. or other defined weights, or in multiples of one thousand quarters.

2. Grades are usually specified, especially since the uniform grain standards prescribed by the Secretary of Agriculture have been adopted in the terminal markets of the United States.

3. The time allowed for shipment is specified.

4. In case of grain exports from points east of the Rocky Mountains to Europe, the usual practice in prescribing ports of export is to permit a range of ports so that the grain may move through any Atlantic or Gulf port.

5. A named foreign delivery port may be specified or a range of ports may be permitted, orders from British firms often authorizing delivery at "any port in the United Kingdom."

6. Price quotations are not always made on a uniform basis, but the most common practice is to quote them on the c. i. f. basis which calls for delivery on board steamer at the foreign port of delivery. Such a price includes the "cost" of the grain on board steamer at the port of export, the premium on the necessary amount by marine "insurance," and the ocean "freight" from port of export to port of discharge. Some grain export prices are, however, quoted on either the f. o. b. steamer or f. o. b. port price basis, the former including all costs incurred in putting the grain on board the vessel at the port of export and the latter all costs incurred in delivering the grain in railroad freight cars at the port of export. Some grain export orders require settlement in terms of foreign currency and others in terms of United States dollars.

7. Settlement is usually to be made on the basis of a sight draft with documents—bill of lading, marine insurance certificate and invoice—attached. The draft is variously drawn for thirty, sixty or ninety days.

**Types of Grain Exporting Concerns.**<sup>1</sup>—Grain is exported from the United States by two main groups of concerns. (1) American grain exporters and export jobbers and (2) American branches of foreign grain concerns.

American grain exporting concerns may be divided into three groups on the basis of broad general methods of conducting their export transactions:

1. American grain export houses are primarily in the business of exporting grain direct to foreign countries. They may also conduct a domestic grain trade and they may job some grain to other American exporters or American branches of foreign grain concerns, but as exporters they deal mainly with foreign grain importers, as merchants who buy and resell export grain. The main offices of some of these concerns are in the seaboard markets and of others in the primary markets. They purchase some grain in the local grain markets but most of them pur-

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<sup>1</sup> Federal Trade Commission, *Methods and Operations of Grain Exporters* Vol. I (1922).



chase the greater part of their export grain either in the seaboard or primary markets.

2. American grain export jobbing concerns include grain dealers who primarily engage in the export grain trade indirectly. They may fill some orders received from abroad but for the most part "job" grain to American grain exporters or American branches of foreign grain dealers. They may, for example, sell grain to a grain exporter f. o. b. steamer port of export, the exporter in turn reselling the grain on a c. i. f. basis to a European grain importer. The export jobber's transaction does not extend beyond the markets of the United States, while the grain export house markets American grain abroad.

3. Some grain dealers have standing connections with foreign grain concerns for whom they virtually act as American representatives on a commission or brokerage basis. Indeed a number of American grain exporting concerns are controlled or owned in part by foreign grain importing and exporting concerns.

In 1921 about thirty per cent of the American and Canadian grain exported through the ports of the United States was exported by foreign grain concerns which maintain American branches. A group of British and Japanese firms are particularly important as exporters of grain through American branch houses.

The American branches of these foreign grain dealers occasionally handle transactions on their own account, but they more commonly act on instructions received from their home offices. Their main functions are to buy grain, see that it is forwarded and that the export grain purchased by them is hedged on the speculative grain exchanges; and if payment for the export grain sold is to be made in foreign currency the branch house may also undertake to hedge against foreign exchange rate fluctuations by selling a sufficient amount of foreign money to cover the sale of the grain.

They also keep the home office informed as to market conditions in the United States. Some of these foreign grain dealer's maintain branches in other grain exporting countries as well as in the United States and are therefore in an unusually

favorable position for the prompt and accurate judgment of changing world conditions affecting grain prices. The sale of the grain purchased by the branches is usually handled by the home office. American branches purchase most of their grain on the seaboard markets, especially on the floor of the New York Produce Exchange. Some grain is bought by them in the primary markets, but except in the Pacific Coast<sup>2</sup> grain district they rarely buy in the local grain markets.

#### FACTORS INFLUENCING GRAIN PRICES

Since the great volume of the available grain of the United States is concentrated at the primary markets of the interior, the prices paid at those markets determine the prices paid at the thousands of country grain markets, at the seaboard markets, or at any of the interior markets to which the grain is shipped for final consumption.

The *prices paid to the farmers* at the local markets do not in every instance follow the primary market with minute precision. They do not fluctuate as frequently during the course of a day as do the primary market prices; neither are the price margins which the local buyers allow themselves everywhere identical. The country prices follow the primary market prices more closely, and the difference between them is narrower at local markets where several buyers compete than at noncompetitive points. Usually, however, the country price is lower than the primary market price by the amount of the freight charges from the local to primary market, and a price margin of a given number of cents per bushel, which the country buyer deducts to cover elevator expenses and yield a profit.<sup>3</sup>

The direct influence of the growers ordinarily affects the price which they receive at particular local markets only in so far as they may depress the price margin which the local buyers deduct from the primary market price, by withholding their grain or by organizing a coöperative elevator. If a great number of growers systematically withheld their grain at many

<sup>2</sup> See Chapter III, p. 56.

<sup>3</sup> For price margins see Chap. III, p. 45.

local markets, their action would affect the price level at the primary markets, but thus far most of the growers have not stored the bulk of their grain longer than three months after the harvesting season, and their coöperative companies have never been able to dictate primary market prices. The growers, however, exert an indirect influence upon the price paid at the primary markets, in that the cost of producing grain, the cost of hauling it to the country elevator, and their profits affect the supply of grain which in the long run is produced. Unless the primary market price is such as to permit the payment of a country price sufficiently high to yield a reasonable profit, the farmers will produce less grain, and the resulting decline in the supply will inevitably force up the entire level of grain prices.

The *prices paid at the seaboard* and interior markets to which grain is shipped from the primary markets are also based principally upon the primary market prices. As the country prices are lower, so the seaboard prices are higher than the prices paid at the primary markets by the amount of the freight rates<sup>4</sup> to tidewater plus certain additional sums per bushel to cover handling expenses and the eastern grain dealer's trade profit. Thus when No. 2 red winter wheat, on May 15, 1923, sold at \$1.16¾ per bushel at New York it sold at from \$1.01½ to \$1.02¼ per bushel at Chicago. The tidewater prices do not fluctuate with the primary market prices with exact precision, for seaboard markets also have elevators which may be filled with grain, and exchanges where prices may be temporarily manipulated. The seaboard markets being more closely dependent upon the export trade, moreover, are influenced by the prices paid on the leading European exchanges to a somewhat greater extent than are the primary markets of the interior.

*Primary market prices* are determined largely by conditions of supply and demand. When the supply of grain is relatively large the price level is low, and when the reverse condition prevails the price level is high. The price determining supply is not the supply available at any particular primary market,

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<sup>4</sup> For freight rates, see p. 69.

not that available at all the primary markets, nor even that of the whole United States, for the grain market is a world's market and the prices paid at the primary markets are influenced to some extent by the grain crops of the world. The term supply, moreover, includes different conceptions, all of which influence the price level. The actual supply is, of course, that portion of the crop which leaves the farmer and enters the grain trade. But prices are influenced during and after the harvesting seasons by the total production of grain; after the harvesting seasons by the visible supply—the amount of grain in elevators, warehouses, railroad cars, vessels and other places where it is available for trading purposes; during the planting season by the acreage planted; and during the growing season by the reported condition of the crops. Conditions of frost, drought, floods, rainfall, grain pests, the opening of new farming regions, the use of fertilizers, land values, the rotation of crops and the relative use of land for different varieties of grain, for live stock, dairy farming or other purposes, and the import duties on grain and flour, are considerations of supply.

The place where the various conditions of supply are considered is on the great grain exchanges. Indeed, it may be said that grain prices are determined at the primary markets only partly in accordance with the actual supply of grain existing at any particular time. They are determined largely in accordance with the judgment of the hundreds of buyers and sellers of grain trading on the grain exchanges, as to how large the yield of the coming crop will be. There is practically always an element of the future in the determination of grain prices.

It is also on the exchanges of the primary markets that the *demand* for grain takes concrete form. The price-determining demand is, likewise, one that is nation-wide and world-wide, and it is affected by many considerations such as the condition of the money market, the state of business prosperity, the growth of population, the shift of population from country to city, the import tariffs of foreign countries, conditions of war or peace, and the degree of competition or combination existing within and between the primary markets.

There are other considerations besides supply and demand which influence primary market prices. The relative prices at the different markets are influenced to some extent by the cost of transporting the grain to the seaboard and to other interior and foreign markets. It is partly because of differences in the freight rates to the seaboard that when on July 3, 1914, No. 2 red winter wheat sold at 81 $\frac{1}{4}$  to 82 cents per bushel in Chicago, the price in St. Louis was 77 $\frac{1}{2}$  to 78 $\frac{1}{4}$  cents and in Kansas City 74 $\frac{1}{2}$ . Prices are influenced also by conditions of quality, for they are regularly quoted in terms of varieties and grades. The marketing and carrying costs also influence the prices paid at the primary markets, that is, the charges for storage, weighing, grading, inspection, etc. While individual dealers cannot obtain higher prices than their competitors because their marketing and carrying costs are higher, the prices paid in particular primary markets and in all the primary markets combined must be sufficient to cover costs and yield a profit. Grain prices are also influenced by forces such as the volume of currency in circulation, the extensive use of credit, the conditions of the money market, and the state of business prosperity.

These are forces which influence prices generally and are not peculiar to grain,<sup>5</sup> except that the last-mentioned factor influences grain prices less than the prices of cotton, crude minerals and other industrial materials, or of most manufactured commodities.

Grain prices are at times subject to manipulation on the exchanges, but so large is the volume of grain annually bought and sold, and so extensive is the competition between the primary markets, that the effects of any artificial manipulation which is not in accord with fundamental conditions of supply and demand can only be temporary. In one sense all grain prices are the products of manipulation because they are constantly being adjusted to the level which in the judgment of the grain trade is warranted by the crop. Manipulation, in the narrower sense, however, has but temporary effects on the

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<sup>5</sup> See Chap. XX.

price of grain. The relation between speculation and grain prices is fully discussed in Chapter VIII.

All of the various price factors are, in their present and future aspects, considered on the grain exchanges. The combined judgment of the multitude of buyers and sellers who transact business on the exchanges determines the price of grain paid in the primary markets.

**Adjustment of the General Level of Grain Prices.**—A more detailed analysis of grain prices requires a separate discussion of the factors which determine the adjustment of the general level of prices from one crop-year to another, and those which influence the current movement of prices throughout a given crop-year.

The general level of grain prices from one crop-year to another may be traced by means of yearly average prices of particular grades. A study of this kind demonstrates that the general level of prices of wheat, corn, oats, barley and rye throughout a period of over thirty years usually fluctuated in the same direction, and to almost the same extent in all of the principal primary and seaboard grain markets east of the Rocky Mountains. Comparison with world and United States crops, world and United States visible supply, world and United States exports, combined terminal markets receipts and shipments, all of which constitute general indices or measures of the grain supply, moreover, show an inverse relationship during nearly all, although not all, crop-years for which comparative data is available. The inverse correlation makes it clear that world conditions of supply usually exert the greatest influence in adjusting the general level of grain prices in the terminal markets of the United States. Indeed the effect of the supply of grain as a price factor is increased with every widening of its scope. World crops show a more consistent effect than domestic crops except in case of corn and barley; the world visible supply of wheat is a more potent price factor than the visible supply of the United States; combined terminal market receipts and shipments exert a greater influence than the receipts and shipments of particular markets. It is also shown that aggregate

crops frequently exert a greater influence than actual market receipts or shipments. The general level of wheat and barley prices have been affected more consistently by world crops than by world shipments, and more by domestic crops than by exports from the United States. Wheat prices have, moreover, been influenced to a greater extent by the aggregate wheat crops of the United States than by the combined receipts and shipments of wheat at the terminal markets.

In case of the general level of prices of corn, oats and rye, however, combined terminal market receipts and shipments have shown an equally exact price correlation and have during some years been a somewhat better index of the forces of supply and demand than world or domestic crops.

In so far as grain prices are world prices it may appear that grain exports should show the most exact price correlation. Their failure to do so is at least partly due to the fact that the relationship between grain prices and exports is distinctly two-fold. Although the general level of terminal market prices during most years have fluctuated inversely as the volume of exports, a direct relationship also obtains between the grain exports from the United States and the difference between yearly average prices in the United States and Liverpool, the great world market for grain. During twenty, of a period of thirty years, United States exports of wheat and flour fluctuated directly as, although not in exact proportion to, the differences between yearly average wheat prices in Chicago and the yearly average prices of American wheat sold in England.

Besides the usual inverse relationship between the general level of grain prices and the crop-yearly supply, two other forces tend to cause the general level of prices at the various terminal markets to fluctuate in harmony—the prevailing competition between the terminal markets and the influence of the future-contract markets. The effect of world and nation-wide conditions of supply and demand are enhanced by the intermarket competition previously referred to. Each market desires to handle the maximum available volume of grain; freight rates are so adjusted that many markets have the alternative of

shipping to any one of several primary markets; some grain is shipped from one primary market to another; and the seaboard markets, eastern points of consumption and foreign markets regularly receive grain from various primary markets. Price differences, moreover, are constantly scrutinized on the exchanges, and the purchase or sale of futures on different exchanges tends to bring cash and future prices into line at the various markets. Speculation in futures, although a factor to be considered, is not of dominant importance in this respect for the close relationship between cash prices at the terminal markets east of the Rocky Mountains is equally as pronounced in case of barley and rye as in case of wheat, oats and corn, although barley and rye futures were not sold during the normal pre-war years which are the basis for this price discussion.

The normal inverse correlation between the general level of grain prices and conditions of world and nation-wide supply, and the usual parity of prices at all the terminal markets, is at times subject to variations. It should also be noted that even when an inverse relationship between prices and the grain supply of the crop-year obtains, the inverse fluctuation is not always for proportionate amounts. Variations of this kind are traceable to the following additional factors which also exert an influence upon the adjustment of the general level of grain prices from one crop-year to another: (1) Abnormal demand and shipping conditions may occur, as was the case during the European war period. (2) General business and financial conditions such as an industrial depression or severe money stringency has at times brought about abnormal grain price movements. (3) The inflation of currency tends to have the same affect on grain prices as on the prices of other commodities and may therefore influence the general level of grain prices. In 1920 for example, the prices of many commodities were inflated even beyond the high prices which had been paid under war conditions. (4) Corners and price manipulation, which are more fully discussed in Chapter XX have on several occasions influenced the general level of grain prices at the terminal markets. (5) The volume of receipts and shipments at



particular terminal markets are sometimes not in line with the receipts and shipments at the others and tend to disturb the usual price parity slightly. (6) Changes in grain freight rates at particular markets without corresponding changes at the others tend toward a readjustment in price relationships, and horizontal advances or deductions in the general level of all grain freight rates may influence the general level of prices at all of the terminal markets.

**Adjustment of Grain Prices Throughout the Crop-Year.—**

When the general level of grain prices for a given crop-year is adjusted in comparison with the general level which prevailed during the preceding crop-year, the movement of prices at the terminal markets throughout a given crop-year usually follows a course or cycle quite different from that indicated by the volume of grain reaching the local or terminal markets, and quite different from the volume of grain stored in elevators or otherwise available for trading. During the closing months of the crop-year prices are usually higher than during the early months when a large part of the available crop ordinarily is marketed, but the increase during the later months is by no means in proportion to the seasonal drop in grain marketings and visible supply; and during the early months of heavy marketings and increasing visible supply there has normally been an advance in prices rather than a decline from the opening prices of the crop-year. Cash grain price movements throughout typical crop-years, although subject to many fluctuations from day-to-day and month-to-month, are substantially equalized or maintained so that the difference between average prices during the opening and closing months are surprisingly small.

Table No. VI sets forth the average cash grain prices paid at Chicago during the crop-years 1907-8 to 1916-17 so as to show the gradual increase during three periods of four months each. The difference between the average spot prices for wheat of the grades deliverable on future contracts was but 15.4 per cent and the differences in case of the specified grades of course grains was 15.6 per cent for rye, 13.2 per cent for oats, 7.6 per

TABLE VI  
AVERAGE GRAIN PRICES AT CHICAGO, CROP YEARS, 1907-1908 TO 1916-1917

	First Four Months	Second Four Months	Third Four Months	Per Cent Change Between Second and First	Per Cent Change Between Third and Second	Per Cent Change Between Third and First
Wheat, contract spot.....	109.24	114.81	126.04	5.1	9.8	15.4
Corn, contract spot.....	65.32	74.64	85.07	14.3	14	30.2
Oats, contract spot.....	42.42	45.40	48.	7.02	5.7	13.2
Barley, inferior to choice....	74.18	80.34	79.79	8.1	0.68	7.6
Rye, No. 2.....	83.39	88.97	96.38	6.7	8.3	15.6

cent for barley and 30.2 per cent for corn. These differences of course, vary somewhat from year to year and are not presented with a view to establishing a fixed relationship between cash grain price movements during particular months. They indicate the substantial degree to which the seasonal movement of grain prices is equalized throughout a typical crop-year.

The gradually changing level of cash grain prices during the crop-year is affected by a number of active price factors.

1. The changing volume or supply of grain which is usually of dominant importance in establishing the general level of prices from one crop-year to another also exerts an influence upon the seasonal course of prices throughout the crop-year, but one that is limited by other forces which counteract the rapid increase in the current supply of grain during the early months of the year and the rapid decrease in the supply available during later months. During the months from July to November when the farm marketings of wheat, that is, the volume of wheat sold by wheat-growers, usually increase rapidly, and during these months and also December, when the visible supply of wheat usually increases and reaches its highest point, wheat prices at the terminal markets normally do not move inversely with the increasing current supply of wheat, but frequently advance substantially over the prices paid when the first shipment of the new crops are purchased. During these months of heavy receipts, wheat prices are normally, however, lower than during the months from January to May, when farm marketings, terminal market receipts and the visible supply decline. The price advance which usually occurs during these months is in inverse relation to the falling supply, but by no means of proportionate extent. The comparatively high prices of these months may be maintained in June, but during the closing month of the wheat crop-year there has frequently been a decline in anticipation of the growing crop of winter wheat which will begin to move in July.

2. Terminal market competition and seasonal demand is responsible in part for the movement of grain prices during the

months of increasing supply. They do much to counteract the downward price influence exerted by the increasing volume of grain shipped to the terminal markets and held in storage for future distribution. The competition between the primary grain markets is especially keen during these months for each is eager to acquire a maximum quantity of grain for gradual resale during the remainder of the crop-year. The profits of the terminal market grain dealers and elevator concerns, depending largely upon the volume of grain handled, causes them to purchase huge quantities of grain during the months when it comes to the primary markets from the country elevators. Many grain consumers, moreover, acquire stocks of grain during these months for current use and for use during later months. They do not depend entirely upon grain stored in terminal elevators by grain dealers. Flour mills, requiring particular grades of wheat, or wheat possessing particular milling qualities in order to produce special brands, are especially active in the purchase of large supplies during the heavy marketing months. To some extent this same motive actuates manufactures of prepared cereals, malt, malt-coffee, etc. While the movement of grain to the primary markets is seasonal, the demand for wheat is also seasonal.

3. Hand in hand with terminal market competition and seasonal demand is the vast storage capacity of the terminal markets. The combined elevator capacity at thirty-eight interior points on July 1, 1920 was reported by the Federal Trade Commission as 216,726,645 bushels, and at fourteen seaboard points as 44,780,578 bushels, or a total of over 261,500,000 bushels, exclusive of private elevators owned by millers and grain converters.<sup>6</sup> Were it not for these elevator storage capacities and the additional storage capacities of millers and manufacturers of grain products, terminal market competition and seasonal demand would be severely limited.

4. Handling costs, storage costs and other carrying costs incident to the carrying of grain from the early to the later months of the crop-year tend to gradually advance prices and

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<sup>6</sup> *Report on the Grain Trade*, Vol. III, p. 288.

are responsible for a large part of the price differences referred to above.

5. The purchase and sale of grain futures on the speculative exchanges is also a factor in the partial equalization of cash grain prices throughout the crop-year. Hedging transactions<sup>7</sup> remove much of the risk incident to cash grain price fluctuations and cause terminal market grain dealers to be more ready to purchase large quantities of grain during the early months of the year at advancing prices or prices which are comparatively high in view of the large volume of grain then received from the country elevators. Changing conditions, moreover, are constantly being discounted in the speculative future markets in advance of actual happenings, and the effect of this probably is to lessen the likelihood of sharp fluctuations in cash grain prices somewhat. Spot grain prices at the terminal markets are influenced to some extent by the prices at which futures are selling, and "to-arrive" prices are more frequently based directly upon future contract prices.

Too much emphasis should, however, not be placed upon the influence of trading in futures on the partially equalized course of cash grain prices throughout the crop-year. It is but one among several cash grain price factors. Examination of the average prices stated in Table No. VI shows that during the crop-years specified, price equalization was equally as pronounced in the barley and rye trades as in the wheat market although barley and rye futures were not at that time bought and sold on the organized exchanges.

The typical grain price cycle and partial equalization of prices usually traceable does not occur invariably. Unforeseen disturbing conditions occurring during the crop-year, after the general level of prices for the year has been well established, may cause grain prices to follow a different course. Unforeseen charges in foreign or domestic demand, in United States or foreign crop-reports, in the availability of freight cars or vessels, or in the ability of grain buyers to obtain crop moving funds, and occasional grain corners, have on various occasions deflected

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<sup>7</sup> Defined fully in Chapter VIII.

grain prices from the course which was anticipated during the opening months of the crop-year. It is the unforeseen occurrences which instill an element of uncertainty into the terminal markets where grain prices are determined.

**Relation between Grain Prices in the United States and Liverpool.**—As the grain surplus of the United States and other grain exporting countries flows mainly toward Great Britain, it has sometimes been assumed that the prices paid at the terminal markets of the United States are fundamentally based upon Liverpool prices; indeed it has been stated that the former are but a calculation arrived at by deducting from the basic prices of the Liverpool market the freight rates and other expenses incident to grain exporting and such profits as grain exporters are able to obtain. Comparison of yearly and monthly average and daily mean prices of wheat in Chicago and Liverpool indicate that wheat prices in these markets are frequently closely related, but that the Chicago market which is representative of the terminal markets of the United States maintains a separate identity. At times the trend of wheat prices at Chicago has differed widely from that of Liverpool prices. The relationship is close when American wheat is on the "export basis," but this price relationship is not invariably maintained and wheat exports fall to a minimum when American wheat is not on that basis. During the nominal pre-war decade of declining wheat exports, there were many periods during which Chicago wheat prices were not in line with the Liverpool market, the bulk of the crop produced east of the Rocky Mountains being retained in the United States at prices determined fundamentally in the terminal markets of the Central West.

When American wheat is on the export basis the prices at the terminal markets are necessarily influenced by the Liverpool market, which receives grain from all the principal surplus wheat producing countries. At such times the price difference or spread must at least be sufficient to cover freight charges and other expenses. The same world conditions, moreover, are then operative both on the Liverpool and the terminal markets of the United States. Even at such times, however, the prices

of wheat in the open markets of the United States at which American wheat sales as a whole—including domestic and export sales—are made, are not merely a calculation based upon prevailing Liverpool prices. The spread between Liverpool and Chicago, for example, changes frequently; price fluctuations do not always occur simultaneously in the two markets, and sometimes pronounced fluctuations occur at Chicago before they occur at Liverpool. Although the relationship is close when there is a large surplus for exportation, the terminal markets of the United States are so large, their ability to promptly weigh domestic and world conditions is so well developed, and the proportion of the crop retained for home consumption is usually so predominant that wheat prices do not blindly follow the lead of the Liverpool market during periods when export orders are received. When prices in the United States are comparatively high because of dominant local conditions or other reasons, the spread may become so narrow as to restrict further export transactions. When this occurs wheat is not on the export price basis.

The relationship between corn prices in Liverpool and the terminal markets of the United States has also been close. Throughout the thirty years ending with the crop-year 1916-17 price fluctuations varied less than in the case of wheat. The proportion of the world's crop produced in the United States and the proportion of the crop retained for home consumption were normally so large that this price relationship may not be cited as evidence that Liverpool is the dominant price-making market for American corn. The presumption that American corn prices are primarily determined in the terminal markets of the United States and that the Liverpool market follows more frequently than it leads, is further substantiated by a study of monthly average and daily mean price fluctuations during the crop-year. Price changes in the United States frequently precede those in Liverpool, and during the crop-year 1912-13, when it became known that the Argentine crop which is harvested in February and March was unusually large the prices of Plate corn in Liverpool declined during several months while

the prices paid for corn imported from the United States continued to advance. American corn exports as a result were comparatively small but corn prices in the terminal markets of the United States were maintained even when the bumper crop of Argentina was definitely established.

The discrepancies between Chicago and Liverpool prices of oats and barley are wider and more frequent than in case of wheat. Even their yearly average prices, which are an index of the general level of prices, have frequently fluctuated in opposite directions. Those of oats failed to correlate during twelve years and those of barley eleven years, within a thirty year period. Oats and barley exports from the United States have normally been small and have accounted for but a small percentage of the crop, and subject to certain exceptional years, the Liverpool market has not been largely dependent upon American oats and barley. These grains have consequently not been on the export price basis as commonly as wheat, and their prices on the terminal markets of the United States have not been influenced by the Liverpool market so persistently. Nor have American terminal market prices for oats and barley influenced Liverpool prices to the extent that American corn prices have exerted such an influence.

When American oats and barley are on the export basis there is a price relationship between Chicago and Liverpool as in case of wheat, but the oats and barley trades in the markets east of the Rocky Mountains have more frequently been on an almost exclusively domestic basis. Consideration of world as well as domestic conditions in the terminal markets may at such times cause price fluctuations similar to those occurring in Liverpool, but Liverpool prices are not then the basis for price calculations in the United States and the price spread necessary for exportation is not maintained.

Barley prices in the markets of the Pacific Coast have usually been influenced by Liverpool prices to a greater extent than those in the terminal markets of the Central West and eastern seaboard because much of the surplus barley of the Pacific Coast States has regularly been exported. Wheat prices in the Pacific

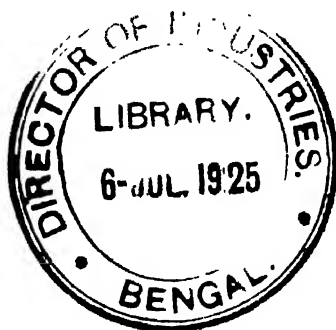


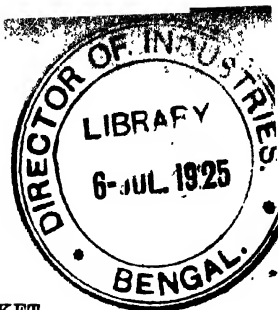
Coast markets, also, have for the same reason frequently been influenced to a greater extent by Liverpool prices than by the prices prevailing in the great primary grain markets of the Central West.

The inspection and grading of grain, the relations between the speculative exchanges and the sale of grain, and the financing of grain crops and movements, since they are subjects which are not confined to the grain trade, are discussed in subsequent chapters.

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*See references appended to Chapter IV.*





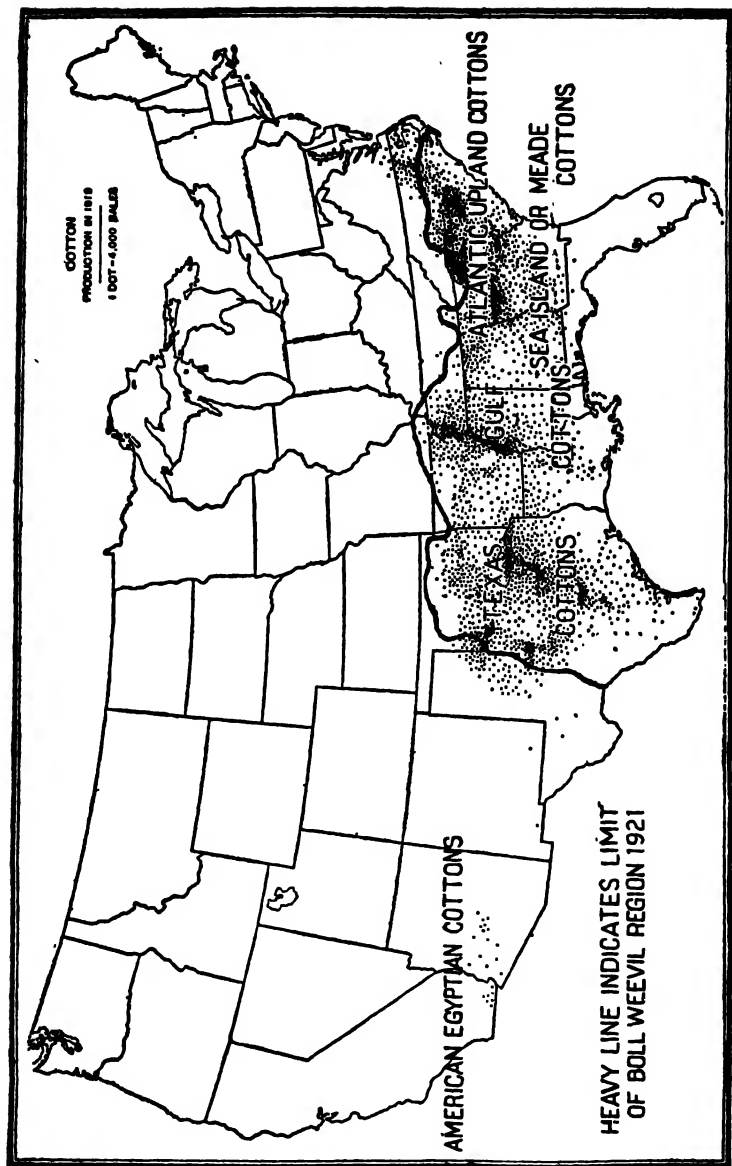
## CHAPTER VI

### THE LOCAL COTTON MARKET

The local cotton trade affords another example of how a farm product produced over wide areas by thousands of growers is sold by the producers and begins its journey to its consumers. The cotton crop of the United States is produced by about 1,900,000 growers, is ginned by 25,000 ginneries, stored at 2,700 public storage places, and is handled by many transportation concerns, local buyers, merchants, factors, exporting houses and brokers. The methods of purchasing the cotton crop from the growers, owing to differences in the nature of the commodity, the weaker financial condition of many of the growers, the greater importance of the foreign market, the location of many cotton mills in some of the growing districts, and to trade custom, differ somewhat from those described in connection with the grain trade.

### THE COTTON-GROWING BELT

While the area of the cotton-growing region is smaller than that of various grain-producing districts, it has been gradually extended westward from the Carolina seaboards to western Texas and Oklahoma. It includes the region south of an irregular line drawn from southeastern Virginia through the western part of North Carolina, the southern part of Tennessee and Missouri, the northern part of Oklahoma and the southeastern part of New Mexico, a distance of 1,500 miles in length and 500 miles in width (*see* Map No. IX). Increasing quantities of cotton have also in recent years been grown on the irrigated lands of Arizona and California. The total cotton acreage of the United States during the years immediately preceding the



MAP IX.—THE COTTON BELT.

War ranged from 34,250,000 to nearly 37,500,000 acres.<sup>1</sup> In 1922 it was reported as 33,742,000 acres.<sup>2</sup>

During the five years preceding the War, the total cotton crop ranged from a minimum of 10,386,000 running bales in the season 1909-1910 to a maximum of 16,109,000 in the season 1911-1912.<sup>3</sup> During the War it reached a maximum of 16,738,000 bales in 1914-1915, and after the War declined to a minimum of 7,954,000 in 1921-1922.<sup>4</sup> In the latest crop season (1922-1923), for which details are now available, Texas produced nearly 33 per cent of the total crop of the United States, Arkansas and Mississippi over 10 per cent each, and the other important cotton-producing states in the relative order of their crops were North Carolina, Alabama, Georgia, Oklahoma, South Carolina, Tennessee and Louisiana. The total crop of the season aggregated 9,964,000 running bales.

**Commercial and Geographical Classification.**—The cotton belt and crop may be variously classified from the standpoint of geographical location and varieties of cotton produced. In the broadest sense the United States produces three general varieties of cotton: (1) sea-island cotton, the growth of which is confined to limited areas near the coast of South Carolina, Georgia, and Florida and to adjacent islands; (2) upland cotton, which is grown throughout the remainder of the cotton belt, and (3) American Egyptian cotton which is grown in the valleys of Arizona and California. Sea-island cotton yields a fine, strong, silky staple or fiber from  $1\frac{1}{2}$  to  $2\frac{1}{8}$  inches<sup>4</sup> in length. Having a fiber exceeding  $1\frac{1}{2}$  inches average length, it is distinctly America's long-staple cotton, and is used for the making of the finest grades of yarn, cloth and lace, for mercerizing, for mixing with silk, and for other purposes requiring a fine variety of cotton. Until recently the average crop of sea-island cotton

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<sup>1</sup> U. S. Bureau of Statistics (Department of Agriculture): *The Agricultural Outlook*, May 22, 1914, p. 13.

<sup>2</sup> Department of Agriculture, *Weather, Crops and Markets*, Dec. 23 1922, p. 566.

<sup>3</sup> Round bales counted as half-bales, U. S. Census, *Bulletin No. 116* (1912), p. 24.

<sup>4</sup> Department of Agriculture, *Year Book* 1921, p. 372.

was the equivalent of about 75,000 bales of 500 pounds each, 25,000 bales of which were ordinarily exported, and even then American cotton mills were obliged to use certain varieties of long-staple upland cotton for the same purposes, and also to import long-staple cotton from Egypt. The boll weevil, however, has reduced the crop of sea-island cotton to less than four thousand bales and it is being replaced by a new variety of long-staple cotton known as Meade cotton. Upland cotton comprises over 99 per cent of the entire cotton crop of the United States. Its staple is on the whole somewhat coarser and its length varies from  $\frac{5}{8}$  to  $1\frac{3}{4}$  inches.

Botanically there are a great many varieties of upland cotton, varying in productiveness, time of maturity, size of boll, length, strength, fineness and color of staple, ability to resist wind and rainstorms, appearance of the plant, and in other respects. The United States Department of Agriculture has classed the different varieties of upland cotton into eight groups or divisions—big-boll, long-staple cluster, semicluster, early or short limb, Peterkin or Rio Grande, and intermediate types—and under each group there are many varieties.<sup>5</sup>

Commercially, all varieties of American upland cotton are bought and sold, on the great speculative exchanges, as “upland” cotton. In the spot markets of the South, however, and among cotton merchants and spinners, upland cotton is variously subdivided into additional classes or types: (1) Thus in the narrower sense “Atlantic upland” cotton is produced in the eastern cotton states—North and South Carolina, Georgia, Florida, Virginia, and parts of Alabama and Tennessee. It is the “short staple” cotton of the United States, its floss varying from  $\frac{5}{8}$  to 1 inch in length. (2) “Gulf” or “Western” cotton is grown in the basin of the Mississippi River and in the Gulf cotton states. (3) “Texas” cotton is produced in Texas and Oklahoma. Both Gulf and Texas cottons, which are frequently grown in the same regions, have a staple of from 1 to  $1\frac{3}{8}$ —usually  $1\frac{1}{2}$  inches—in length. (4) The three preceding types

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<sup>5</sup> See “Varieties of American Upland Cotton,” Bureau of Plant Industry, *Bulletin No. 163*.

are frequently lumped together as "short-staple" cotton. From them are distinguishable certain medium "long-staple" upland cottons most of which are known as "benders," "rivers," "peelers," "creeks," "quarter," etc., cottons and are grown in the bends of, or near, the Mississippi, Arkansas, Pecos and Red rivers in Mississippi, Arkansas, Texas and Oklahoma. The length of the staple of these cottons varies from  $1\frac{1}{8}$  to  $1\frac{3}{4}$  inches.<sup>6</sup> More recently substantial quantities of long-staple upland cotton have also been produced in various counties of Tennessee, Georgia and the Carolinas.

American Egyptian cotton produces a staple of from  $1\frac{1}{2}$  to  $1\frac{3}{4}$  inches in length. In 1920 the crop amounted to 91,965 running bales.

There are no sharply defined geographical limits within which the various types of upland cotton are grown. It is for this reason that the various cotton regions are not sharply defined in the accompanying map (No. IX). Of the total cotton produced during recent crop years slightly over 90 per cent has consisted of short-staple cotton having fiber under  $1\frac{1}{8}$  inches, and all of the long-staple varieties, including long-staple upland, have comprised slightly less than 10 per cent.<sup>7</sup>

In addition to sea-island, American-Egyptian and the various types of upland cotton, from 400,000 to 900,000 bales of so-called "linters" are annually marketed. Linters is the short fiber obtained by reginning cotton seed before the oil is extracted in the cotton-seed oil mills. It is used in upholstering, in manufacturing mattresses, comforts, batting, felts, cushions, wadding, pads, absorbent cotton, guncotton, niter powder and writing papers, and when mixed with shoddy it is used in making low-grade yarns, wrapping twine, rope, lamp wicks and candle wicks.<sup>8</sup>

**World's Production of Cotton.**—The cotton belt of the United States produces over 60 per cent of the world's cotton crop available for mill consumption. The cotton grown in India and

<sup>6</sup> U. S. Department of Agriculture, *Year Book*, 1922, p. 371.

<sup>7</sup> Long-staple (over  $1\frac{1}{8}$  inches) comprised 8.8 per cent in 1919 and 9.8 per cent in 1920.

<sup>8</sup> "Supply and Distribution of Cotton," (1913), U. S. Census, *Bulletin* No. 117, p. 14; Department of Agriculture, *Year Book*, 1920, p. 382.

China, two of the heaviest foreign cotton-producing countries, consists mostly of coarse short-staple varieties. That of Egypt is of excellent quality, but scarcely begins to satisfy the demand of the world's cotton mills for high-grade, long-staple cotton. The remainder of the world's crop available for mill consumption is widely scattered from Russia, Turkey and Persia, to Mexico, South American countries, the West Indies and colonial Africa. The close dependence of British and European cotton mills upon the American crop caused various British, German, French, Belgian, Dutch, Portuguese, Spanish and Italian associations and organizations to promote the culture of cotton in the colonies of their respective countries and elsewhere. The relative importance of the American cotton crop, however, may not be measured solely by its volume; the poor quality of the cotton grown in some of the principal foreign cotton-producing countries still obliges the manufacturers of the finer grades of yarn and cloth in Europe to import the bulk of their supply from the American cotton belt.

TABLE VII

WORLD'S PRODUCTION OF COTTON FOR MILL CONSUMPTION<sup>1</sup>*(In bales of 500 pounds net weight)*

Country	1905-1906	1910-1911	1911-1912	1913-1914	1921-1922 <sup>2</sup>
United States...	10,340,000	11,104,000	15,013,000	13,545,000	7,954,000
India.....	2,519,000	2,722,000	2,270,000	3,801,000	3,360,000
Egypt.....	1,181,000	1,506,000	1,463,000	1,470,000	837,000
China.....	415,000	775,000	625,000	1,200,000	1,175,000
Russia.....	585,000	981,000	939,000	1,004,000	95,000
Brazil.....	258,000	280,000	275,000	420,000	612,000
Mexico.....	125,000	147,000	130,000	150,000	126,000
Peru.....	55,000	95,000	100,000	110,000	157,000
Persia.....	47,000	117,000	120,000	140,000	"
Turkey.....	107,000	105,000	124,000	130,000	"
All others.....	100,000	195,000	210,000	285,000	425,000
Total.....	15,732,000	18,027,000	21,269,000	22,255,000	14,741,000

<sup>1</sup> U. S. Census Bulletin, No. 125, p. 57; No. 150, p. 76.<sup>2</sup> Bales of 478 lbs.<sup>3</sup> Included in all others.

## THE LOCAL HANDLING AND SHIPMENT OF COTTON BY GROWERS

**Ginning and Baling.**—Ordinarily the first step in the marketing of cotton is to haul it from the farms to the gin. Growers who have obtained advances from local merchants or other persons, with the growing cotton as security, are sometimes required to haul the picked cotton, before it is ginned, to the scales of these merchants to have it weighed, and obtain credit at the market value. In any event, the "seed-cotton"—cotton with lint attached to seeds—is taken to some one of the 25,000 ginneries to have the seeds removed and the lint baled. Usually about two thirds of the weight of seed-cotton comprises seed and one third lint. Eli Whitney, by the invention of the cotton gin and subsequent inventors by its improvement, made possible the development of the cotton industry to its present vast proportions, for the gin has completely displaced the old hand method of separating the seed from the lint. Ginning has undergone great changes and improvements since the construction, in 1793, of the first gin suitable for upland cotton. Mechanically, the gin has developed from the hand gin, which daily ginned half a modern bale per man, to the old plantation gin which increased the quantity to several bales, and then to the centralized high-power gin which commonly gins and bales from 50 to 75 bales daily and in some cases as many as 250 bales in a day.<sup>9</sup> Two main types of gin are in use at present, the roller gin and the saw gin. The former, which was in use long before the Whitney saw gin was invented, is used for ginning sea-island, American-Egyptian and Meade cotton, the seeds of which are loose in the lint. The later is used to gin upland cotton, the seeds of which are removed only with difficulty. It consists of a series of saws attached to revolving cylinders, which draw the lint through the openings or slits of steel plates.

The management of the gins has also undergone changes. The original hand gins were operated on the farms, and when power gins came into use each large plantation continued to operate its own plant. The cost of purchasing, operating, and repairing

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<sup>9</sup> C. W. Burkett and C. H. Poe, *Cotton*, p. 221.



power gins, which were used but a small part of the season, proved to be too expensive for the smaller farms into which most of the large plantations were divided, and the plantation gins were largely displaced by high-power central ginneries. Most of the growers now take their seed-cotton to large, well-equipped stationary ginneries and pay the operators for their ginning and baling services. Some of the large plantations, however, which are owned by individuals, corporations or syndicates are equipped with power gins of their own.

The large ginneries are frequently unable to gin and bale all the cotton immediately after it is received by them. They therefore issue "gin tickets" against the production of which they will eventually deliver the baled cotton. These tickets are frequently accepted by local banks as the basis for the advance of funds to cotton buyers.<sup>10</sup>

The ginneries pack the lint cotton into loose rough bales. The usual "square" gin bale of upland cotton known as the "flat" or "plantation" bale has dimensions of about 54 by 27 by 45 inches and a gross weight of about 500 pounds. Some upland cotton is also baled into "round" bales which are about 35 inches long, 20 inches in diameter, and weigh about 250 pounds. In the season of 1912-1913, round bales of upland cotton which are commonly counted as half-bales, comprised but 81,528 as compared with 13,373,998 square bales. Sea-island cotton is usually packed into bales 80 inches long, having a diameter of 32 inches and weighing about 390 pounds,<sup>11</sup> or in bags 7½ feet long and 2½ feet in diameter and weighing approximately 350 pounds.<sup>12</sup> The average gross weight of square upland cotton bales in the season 1920-1921 was 506.4 pounds, round bales, 256.4, and sea-island bales, 384.1. Broadly speaking the standard American bale weighs 500 pounds and is generally so regarded in domestic markets. On the settlement of contracts in the foreign trade, however, "the standard for cotton from Texas and Arkansas is usually fixed at 530 pounds per bale, that for all other Gulf

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<sup>10</sup> J. J. Arnold, "Financing of Cotton," *The Annals of the American Academy of Political and Social Science*, Sept., 1911, p. 283.

<sup>11</sup> U. S. Census, *Bulletin No. 95*, p. 52.

<sup>12</sup> Department of Agriculture, *Year Book* (1921), p. 374.

cotton, including Alabama and Oklahoma, at 510 pounds, while that from other sections is fixed at 500 pounds."<sup>13</sup>

At a small percentage of the gins, the baled cotton is completely covered with bagging, but usually a space on each side of the bale remains exposed, for before the bale is shipped to its final destination it is recompressed into a smaller, more compact bale. The amount of tare—bagging and iron bands—used at the ginneries varies from 19 to 24 pounds, or from 3.8 to 4.8 per cent of the gross weight of a 500 pound bale.

**Local Storage and Hauling.**—The seed-cotton is hauled to the gins by the growers in open wagons. After being baled, it may be sold at the gin; it may be stored; it may be consigned to a factor for sale at some larger cotton market and shipped to him by rail or water; it may be hauled directly to a nearby cotton mill; it may be taken to a local railroad station or steamboat landing for sale; or it may be taken back to the farm. The bales are often subjected to rough and careless handling. At the railroad stations and markets they are sometimes piled on open platforms or even on the ground, and when taken back to the farms they are sometimes left out in the open, unprotected from rain or farm animals. One source of great waste in the cotton trade is gradually being eliminated by the construction of a greater number of protected storage places. When cotton is stored in recognized warehouses, whether by growers or buyers, warehouse receipts are issued. Such receipts are used by some growers to obtain loans from banks in order to avoid the sale of their cotton at low prices, and by cotton buyers to obtain funds for the financing of their transactions.

At some time or other most of the cotton is hauled to local shipping points. The hauling is done mainly by the growers, although in exceptional instances it is done by hired freighters. Cotton being a more valuable commodity than grain, it may be hauled in smaller loads and the hauling cost is of relatively smaller moment. In 1906 the Department of Agriculture stated that, for the United States as a whole, the average cost of hauling cotton from farms to shipping points was about 80 cents

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<sup>13</sup> U. S. Bureau of Corporations, *Cotton Tare*, p. 4.

per bale, and the average load, a fraction more than three bales.<sup>14</sup> The average cost per hundred pounds in that year ranged from 9 to 23 cents in the various cotton-growing states, and the average distance to shipping points, from 7.9 to 15 miles. In 1915 the average load was reported to be three bales and the average distance to market somewhat less than it had been nine years earlier.<sup>15</sup>

#### SALE OF COTTON BY THE GROWERS

Cotton may be sold either after it is ginned or as seed-cotton. The former practice prevails almost universally in the United States, for the sale of "cotton in the seed is a sort of game of chance based on the law of averages." "The practice of selling cotton in the seed is confined almost exclusively to the western end of the cotton belt. The better class of buyers base their calculations of lint percentages in making their offers for cotton on the comparative yield from day to day of lint to seed in their own gin or the one which they patronize. As a result the farmer who grows a better variety yielding a higher percentage of lint gets only the average price, and the one who grows a 'sorry' variety will in most cases receive some of the benefits that belong to his more progressive neighbor."<sup>16</sup>

There are various methods by which the growers sell their cotton crop. These methods are affected by the financial condition of the growers, the existence of different kinds of buyers, the number of available storage houses, the amount of coöperation among the growers, the prevailing price, the ease or difficulty of reaching the large cotton markets or the cotton mills of the South, the prevailing custom, the intelligence of the growers and by other considerations. During the slave days the cotton grown on large plantations was usually consigned directly to the cotton factors or commissionmen located at the large seaports such as Charleston, Savannah, and New Orleans, the grower paying a commission for the sale of his cotton and also handling

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<sup>14</sup> U. S. Bureau of Statistics, *Bulletin No. 49*, p. 12.

<sup>15</sup> Bureau of Crop Estimates, *Farmers' Bulletin No. 672*, p. 12.

<sup>16</sup> U. S. Department of Agriculture, *Year Book* (1912), p. 453; 1921, p. 375.

and shipping costs such as cartage, freight, storage, insurance, weighing, compressing and repairing bagging.

This method continued for a time after the Civil War, but, with the break-up of most of the plantations into smaller farms, many of the small landowners and tenants had insufficient marketing knowledge or were unable to assume the responsibility of consigning their cotton to distant factors. The old method, although it did not disappear entirely, was largely displaced by a system of numerous middlemen. The small growers frequently sold their crop to a local merchant at the county seat or other local town, and the cotton then passed successively through the hands of a commissionman at the state capital, a dealer at the seaport and a New York exporting concern.<sup>17</sup>

At the present time the farmers sell their cotton in different ways, and, as will be seen in the following chapter, the local buyers in turn dispose of their purchases variously.

**1. Sale to Local Merchants.**—In parts of the eastern cotton belt—in the states of the South Atlantic seaboard where 50.8 per cent of the farms in 1919 comprised less than fifty acres and where some of the growers are financially weak—a portion of the cotton crop is still sold to local merchants, bankers or landlords or through them as commissionmen. The system is a remnant of the conditions which followed the break-up of the large plantations. The weak financial condition of some of the small landowners, and especially of the small tenants, not only obliges or induces them to sell their cotton immediately after it is harvested, but it causes them to pledge the growing crop with local merchants for an advance of needed implements, supplies, live stock or funds. The loans are usually obtained from local merchants, but sometimes from local bankers, or in the case of tenants, from landlords. The tenants of large landowning corporations or syndicates sometimes obtain advances from general merchandise stores which are operated by those concerns. In any case, the growers who obtain the advances, which may amount to 30 or 40 per cent of the estimated value of their cotton crops, must settle with the merchant, banker or

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<sup>17</sup> C. W. Burkett and C. H. Poe, *Cotton*, p. 72.

landlord when their cotton is sold. They may sell the cotton to the merchants who in many cases are cotton buyers, or they may sell it through them on a commission basis, but they receive merely the balance due after the merchant's loans are repaid.

This method is necessarily an expensive one. The growers are obliged to pay interest on the loans which they obtain, and since the merchants in turn frequently borrow from banks, the interest charges paid by the growers are usually high. If they sell to the local merchants, a dealer's profit is deducted from the price which they receive. If they sell through them they are obliged to pay a commission of about \$1.00 per bale. If they store the cotton with the merchant they are obliged to pay a storage charge of about 50 cents a bale. The system, moreover, induces them to sell their crop as soon as possible, that is, during the harvesting season when prices are frequently at their lowest level. The method is gradually declining in importance, for the growers are becoming financially stronger, other buyers are appearing at the local markets, and the coöperative farmers' unions are in some instances providing other means for obtaining loans and for storing cotton in warehouses.

**2. Sale to Local Ginners.**—Where comparatively small quantities of cotton are produced it is frequently sold to the nearest ginner. The local merchant may in fact operate a cotton ginnery.

**3. Sale to Exporting Houses and Cotton Brokers.**—The practice which prevails the most widely throughout the Gulf states, Texas and Oklahoma, but which is also becoming common in the eastern cotton belt, is the direct sale by the grower to the agents of large exporting houses and other cotton-buying firms or brokers who ship the cotton abroad or to the northern mills. Most of the large exporting houses have their main offices at New York, New Orleans or Galveston, and branch offices at some of the principal cotton-trading centers such as Memphis, Atlanta, Savannah, and Houston, and, if the main office is in New York, they also have a branch office at New Orleans and Galveston. Growers in the immediate vicinity of these cities sell their crop at these branch offices, but the usual practice is

to sell it to local agents who are sent throughout the cotton-growing districts. The large exporting concerns have local representatives at the larger interior towns or interior points of concentration who buy cotton directly from the growers who haul it there. The trading at some of the larger interior markets is done in accordance with the rules of local cotton exchanges. Since much cotton is sold at these points by local merchants and commissionmen as well as directly by farmers, and as they perform various other functions, they will be more fully described in the following chapter. The large exporting houses also send traveling buyers to many local markets to purchase cotton directly from the growers at the gins, the railroad stations, steamboat landings, local warehouses and cotton yards, or at growers' premises. Some of them have more than one hundred local representatives and traveling buyers to purchase from the growers and local dealers all the cotton they are able to obtain at current prices.

The larger cotton exporting houses who resell cotton in domestic and foreign markets do not confine their purchases to American cotton. Some of them have an international trading organization which makes it possible to readily purchase Egyptian, Indian, Peruvian and Chinese cotton for exportation to the cotton importing countries.

**4. Sale to Southern Mills.**—Since 1903 the mills located in the cotton-growing states have consumed more American cotton than the mills located in New England and other northern states. During the year ending July 31, 1921, the total cotton consumption of the southern mills including imported cotton, amounted to 3,151,954 running bales (counting round bales as half-bales) while those of all other states amounted to 2,257,025 bales. In parts of North and South Carolina, Georgia and Alabama where most of the southern mills are located and to a smaller extent in Tennessee, Mississippi, Texas and Virginia, some growers sell their cotton directly to the spinners. The southern spinners obtain much of their supply from growers and local merchants who sell directly at the mills, and some of them also send buyers through the districts which grow cotton suited to their particular

needs.<sup>18</sup> The sale of cotton by growers to local mills is the most direct method of selling cotton in existence and ordinarily yields to the growers the highest profits. The southern mills, being in competition with buyers who ship cotton abroad or to northern mills, are obliged to pay such prices as market conditions warrant. The sales being direct, all selling costs are in some cases avoided; in others there is a weighing charge of from 10 to 25 cents per bale, but at most the marketing costs do not exceed 50 cents per bale.

**5. Consignment to Cotton Factors.**—Some growers, instead of selling their cotton to local buyers, consign it to commissionmen or factors at the larger interior points of concentration or at the ports. The factors who handle cotton for growers, local merchants and others may sell the consignments immediately, and charge a commission for their services. They may also insure the cotton, place it in storage, and make an advance of from 60 to 75 per cent of its market value to the owner. At times they make advances to farmers with the growing crop as security. A part of the funds used to make advances is obtained from banks which accept storage receipts as security for loans.<sup>19</sup> Since most of the growers sell their crop at the local markets, the central commissionmen handle less cotton for growers than for merchants and other local buyers.

**6. Sale to Foreign Buyers.**—While the bulk of the cotton shipped abroad is sold and shipped to foreign buyers by American cotton exporters, some Liverpool and Manchester cotton houses send buyers to the United States.<sup>20</sup> These buyers, however, make their purchases mainly at the large interior and port markets, and consequently purchase relatively little cotton directly from the growers.

**7. The Cotton-growers' Unions or Associations.**—Before the late war small quantities of cotton were sold at coöperative farmers' warehouses by the farmers themselves or by the ware-

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<sup>18</sup> M. T. Copeland: *The Cotton Manufacturing Industry of the United States*, p. 183.

<sup>19</sup> J. J. Arnold: "Financing of Cotton," *The Annals of the American Academy of Political and Social Science*, Sept., 1911, p. 282.

<sup>20</sup> Copeland: p. 354.

house company upon payment of a fee or commission of say 50 cents per bale.<sup>21</sup> Some of the coöperative warehouses classified and graded, sampled, weighed, and after grouping it into lots of 50 or more bales, sold cotton for the growers. The activities of the growers' unions were, however, wider than the sale of cotton for their members, the actual sales through union salesmen comprising but a small part of the cotton crop.

The cotton growers at that time coöperated chiefly through the Farmers' Educational and Coöperative Union of America or "Farmers' Union" which was organized in 1902, and the Southern Cotton Association which was organized in 1900 but which is no longer active.<sup>22</sup> Other associations and organizations such as the Alliance and the Grange have also been active at various times, but the Farmers' Union which claimed a membership of three million, was the principal active coöperative organization in the cotton trade. It consists of a national body, various state organizations or "divisions," many county organizations, and a still larger number of "local unions." Its membership includes fruit growers, grain growers and other farmers, teachers, ministers and physicians, as well as cotton growers, but the organization was strongest in the cotton states, particularly in Texas, Oklahoma, Arkansas, Georgia, Mississippi and Louisiana.<sup>23</sup>

Coöperation was undertaken by the cotton growers as the result of a long period of low prices. The Bureau of Crop Estimates judged that the average cost of producing a pound of cotton in 1909 and 1910 exceeded 8 cents, yet from 1890 to 1904-1905 the average price at New Orleans with the exception of two seasons was less than 9 cents a pound, and during some seasons went below five and six cents. The movement became especially active in 1904-1905 when the average price at New Orleans, after rising to 12.2 cents in the previous year, again fell to 8.7 cents, but it received a set-back in 1907-1908 when the financial panic together with other conditions made impossible the Union's demand for a grower's price of 15 cents.

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<sup>21</sup> Bureau of Corporations: *Cotton Exchanges*, Part V, p. 353.

<sup>22</sup> *Ibid.*, p. 321; G. H. Powell: *Coöperation in Agriculture*, p. 185.

<sup>23</sup> For present activities of this organization in various agricultural fields see Chapter XV.



The coöperative farmers' unions were active in various ways. They endeavored to restrict production by reducing cotton acreage. Their general policy in this regard was to encourage the farmers to grow less cotton and more corn or other diversified crops, but they also at times advised members to plow up cotton fields which were already planted. The Southern Cotton Association was especially active in discouraging cotton production in 1905-1906, and the agitation appears to have been temporarily effective, for the acreage harvested during that season fell to slightly over 26,000,000 acres, from 30,000,000 in the previous season. Since then the cotton acreage has risen and it is impossible to judge the full effect of later efforts to restrict the production of cotton.

Before the war occasioned a heavy advance in cotton prices, the coöperative unions attempted to maintain cotton prices by recommending minimum prices for the crop, varying from 10 to 15 cents a pound. To enable the members to hold their crop until the recommended prices are paid they established some 1,600 warehouses. These warehouses, which were mostly of small capacity, were usually operated by separately organized companies or associations. They stored the cotton for members, obtained loans for them through regular banking channels at favorable rates of interest with the stored cotton as security, and as formerly stated, would classify and grade, weigh, sample and sell the cotton when instructed to do so. The actual effect of the price-fixing and warehouse policy cannot be accurately judged, for cotton prices are influenced by many varying conditions. The growers did not receive the prices urged by the unions and the warehouses handled but a small share of the total cotton crop.

The producers' unions also endeavored to restrict production in the cotton belt by discouraging the use of commercial fertilizers, but there was no uniformity in this regard. Some of them organized companies to operate fertilizer plants. The "Farmers' Union" formed corporations or associations to operate gins, to purchase supplies, own newspapers and engage in other business enterprises. It urged a legislative program which it regarded

as beneficial to the farming population, and it was also a secret organization which acted in a fraternal, educational and social capacity.

While the movement for the coöperative marketing and handling of cotton was slowly progressing in parts of the cotton belt, it was also under way in the California cotton district. The "Imperial Valley Long-staple Cotton Growers Association" has been an active cotton trade agency in the Imperial Valley.<sup>24</sup>

The grower's coöperative movement has become more active in the upland cotton belt since the precipitate break in cotton prices which occurred in 1920. Active growers associations were then organized in Oklahoma, Arizona, Texas, Mississippi, Arkansas, Georgia, North and South Carolina and Alabama and in four of these states these associations have begun to market cotton.<sup>25</sup> Their method has been to obtain samples at the cotton compress points, have them classed and graded into even-running lots at the association's sales office by association experts, and then effect sales "by displaying samples and by forwarding samples and selling to arrive."<sup>25</sup> Active cotton marketing associations of this kind are the Staple Cotton Coöperative Association of Greenwood, Miss., the Oklahoma Cotton Growers' Association of Oklahoma City, Okla., and the Texas Farm Bureau Cotton Association.

When the great post-war decline occurred in 1920 the American Cotton Association also became an active cotton trade agency. It has marketed and handled but little cotton, but it has concerned itself largely with cotton prices. In the spring of 1921 it undertook a campaign for the limitation of cotton acreage, and a marked reduction was brought about through its efforts.<sup>26</sup>

#### THE DETERMINATION OF GROWERS' PRICES

As in the case of country grain prices, the prices received by

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<sup>24</sup> U. S. Department of Agriculture, *Bulletin No. 458*, "Handling and Marketing Durango Cotton in the Imperial Valley."

<sup>25</sup> Federal Trade Commission, *Preliminary Report on the Cotton Trade*, Feb. 26, 1923.

<sup>26</sup> *Ibid.*

the growers of cotton are based primarily upon the prices prevailing at the large central markets which reflect the combined judgment of the buyers and sellers of the world. Cotton producers' prices, however, are more complex than those paid to grain growers. The latter are based directly upon the price at which grain is sold at the large primary markets, the grain buyers knowing that the relation between spot prices and the prices of future contracts on the grain exchanges is usually, although not always, sufficiently definite to enable them to readily hedge should they desire to do so. Many cotton buyers also desire to protect themselves against losses resulting from fluctuations in cotton prices by hedging in the speculative cotton markets, that is, when buying cotton they wish to sell an equal quantity of future contracts and when contracting to deliver cotton which they have not as yet purchased, they wish to purchase an equal quantity of future contracts.<sup>27</sup> The cotton exchanges at which this hedging is done are mainly those at New York, New Orleans and Liverpool. Future and spot cotton prices, however, have not in the past borne the definite relationship to each other—they have not maintained the substantially exact parity which is usually maintained in the grain trade. Owing largely to the right to deliver many different grades of cotton on a future contract which is made out in terms of middling cotton and the failure to establish the "differences" between the various deliverable grades with exactness, cotton futures have frequently sold at an abnormal discount as compared with the prices paid for spot cotton at the large spot markets. Since many cotton buyers consider hedging essential to the economical handling of the cotton crop and cotton "futures" are necessary in order to hedge, the failure to maintain a parity between the prices of spot cotton at the large cotton markets and the price of futures has obliged such cotton buyers to base the country price primarily upon the price of future contracts. One of the purposes of the Cotton Futures' Act of 1916 is to maintain a closer parity between spot and future contract prices.

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<sup>27</sup> See Chap. VIII.

The following statement by the United States Bureau of Corporations indicates the extent to which producers' prices are based upon future contract prices:

A matter of great importance to the current discussion is that these interior buyers very generally base their bids on the future quotations of some cotton exchange. That is to say, in arriving at the prices which they will pay producers they constantly consult the future market and add to or deduct a certain number of points, technically known as "limits," according to the state of the market, the grade of the cotton, or other circumstances. In the case of a merchant having buyers in the interior, the limits which are thus to be added to or deducted from the contract price are determined at the head office. They are sent to the field representatives to govern purchases from cotton producers and country merchants. These interior buyers, in case they do not have ready access to future quotations, are kept advised by the head office of any important changes in them and they use these future prices in connection with the limits furnished them in making their purchases.<sup>28</sup>

The cotton buyers do their hedging on any one of the three great speculative exchanges, and they shift their hedges from one to another, according to which market is best adapted at any particular time. They likewise base their buying prices upon the future prices of any one of these exchanges, for they know what middling cotton is normally worth at any point in the cotton belt as compared with the prices at which futures are selling in New York, New Orleans or Liverpool. Knowing the correct price for middling cotton they may readily judge how much more or less should be paid for the higher and lower grades.

The common practice of the large as well as of numerous small buying concerns is to instruct their interior buyers to purchase at a given number of "points" (hundredths of a cent) "off" or "on" the price at which future contracts are selling at some one of the speculative exchanges. Whether these so-called limits will be "off" or "on" will depend upon varying conditions such as the month selected for hedging, the extent

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<sup>28</sup> *Report on Cotton Exchanges*, Part IV, p. 50.

to which the futures are selling at a discount, whether the prices are paid for delivery at the interior market, at the port of shipment or at final destination and whether or not transportation and other costs are included in the limits. Instead of calculating a limit "on" or "off" the future price, a merchant, exporter or broker may compute a definite price as a guide for his buyers. In any event the price paid to the grower ordinarily is one that is based upon the future prices of one of the speculative exchanges minus freight, compress, purchasing and handling costs and an additional amount to cover any uninsured risks incident to the business and a dealer's profit.

In the United States cotton is commonly bought at gross weight—lint and tare—but in selling to a foreign buyer the American exporter is usually required to sell at net weight and at c. i. f. (cost, insurance and freight) prices. Having received an offer from Liverpool, the exporter in addition to the usual deductions makes an allowance of 6 per cent of the gross weight of the cotton to cover tare, and deducts ocean freight and insurance. When a foreign cotton importer, for example, after examining the price of futures on the Liverpool Exchange, bids sixpence for cotton delivered in Liverpool on his buying price by deducting from 12 cents (the equivalent of sixpence) the following amounts:

	points
Tare, 6 per cent of 12 cents.....	72
Inland freight and compressing, say.....	50
Ocean freight, say.....	55
Insurance, say.....	11
Expense of doing business, say.....	12
Profit, say.....	10
Total.....	210

Deducting 2.10 cents from 12 cents leaves 9.90 cents as the price at which he hopes to purchase the cotton from the farmer.<sup>29</sup> This calculation contains a fixed profit of 50 cents per bale (10 points) and in addition, a hidden profit of 19 points

<sup>29</sup> Bureau of Corporations, *Cotton Tare*, p. 36.

due to the deduction of 6 per cent (72 points) for tare, although the bale purchased from the farmer contains only about 4.4 per cent (53 points) of tare. The hidden profit, which is due to the differences in the tare rules applicable in the United States and foreign countries, is contingent, for competition may compel the exporter to share it with the grower by paying him more than 9.90 cents, and the foreign buyer may, in case the actual tare is ascertained by physical test, present a claim for over-tare.

While the prices paid to the cotton growers are based primarily upon the future prices of the speculative exchanges, they are frequently affected by other considerations. There are numerous local buyers, especially some of the country merchants, who do not calculate their prices with the care the the larger exporters and brokers do; there are local spinners who do not need to deduct freight, compressing and other handling costs; and cotton may also be shipped to the large interior points of concentration or the ports on consignment and sold at the spot prices which are there paid. Competition between local buyers, therefore, and the ability of some growers to sell in the large spot markets, obliges the local buyers to modify their calculations whenever the future contracts sell at abnormal discounts as compared with the cotton prices of the large spot markets. An Oklahoma cotton firm, for example, which in 1906-1907 computed its buyers' limits with reference to the New York future market, gradually changed its limit from 60 points "off" on September 25, to 10 points "off" on January 7; "even" on January 14; 10 points "on," on January 21; and 30 points "on" on February 11; because the New York futures were selling at an increasingly abnormal discount.<sup>80</sup> The season of 1906-1907 is an extreme instance because the New York revision committee at that time fixed grossly erroneous differences between middling cotton and the other deliverable grades, but it illustrates how the cotton buyer cannot, except temporarily, disregard the prices paid in the large spot markets.

It is to be understood, also, that in applying the limits based

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<sup>80</sup> Bureau of Corporations, *Cotton Exchanges*, Part IV, p. 58.

upon the price of cotton futures, the local buyers exercise their judgments as to the quality of any particular lot of cotton. Limits based upon middling cotton are modified in buying cotton of higher or lower grade, and different staple lengths, but there is much complaint that the growers of high-grade and long-staple cotton do not always obtain the relative prices to which they are entitled.<sup>31</sup> They also take account of the amount of tare. Owing to the practice of buying cotton at gross weight growers sometimes believe that they are receiving the price of cotton for the bagging and bands on the bale, but it is generally understood in the trade that this view is fallacious. In determining the price of cotton futures and spot cotton at the central markets full allowance is made for the customary amount of tare, and if a particular lot is over-tared the local buyers or spinners will adjust the price paid, make an allowance in the weight, or refuse to purchase the cotton.

#### BIBLIOGRAPHY

(See references designated by a \* appended to chapter VII, pp. 173 to 175.)

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<sup>31</sup> "The Relation of Cotton Buying to Cotton Growing," The Bureau of Plant Industry, *Bulletin No. 60*, p. 7.

## CHAPTER VII

### CENTRAL COTTON MARKETS: THE DISTRIBUTION OF COTTON.

Having described the local cotton market and the manner in which the growers dispose of their crops, it is now proposed to trace the cotton crop in its movement from the local buyers to the spinning mills of the world. As the growers sell their crops in different ways so also the portion which is shipped out of the cotton belt is sold by merchants, exporters, brokers and factors in different ways, is shipped to widely varying markets, and moves over varying routes.

#### SUPPLY AND DISTRIBUTION

The total annual supply of cotton in the United States shown in Table VIII is the supply for the year ending July 31, 1922, that is, for a period extending from one cotton harvest to another. It is, therefore, in excess of the crop grown during the preceding season, for it is made up not only of current ginnings but also of cotton on hand at the beginning of the year, the imports of cotton from abroad, and the quantity of linters produced during the year.

**Cotton Exports.**—Although the quantity retained for use in American mills is slowly advancing as compared with the shipments to foreign mills, the cotton industry is still dependent chiefly upon the export trade. During the years ending August 31, 1912, 1913 and 1914 (*See* Table VIII) 59.7, 54.2 and 54 per cent, respectively, of the total cotton supply and an equivalent of 66, 62 and 60 per cent respectively of the total crop of the preceding season, was shipped abroad. Nearly four-fifths of the total cotton exports are shipped to the United Kingdom, Germany and France. For many years the first of



these countries took the bulk of all the cotton exported from the United States, and in the fiscal year 1914<sup>1</sup> the British pro-

TABLE VIII.<sup>1</sup>

SUPPLY AND DISTRIBUTION IN YEARS ENDING  
AUGUST 31, 1912, 1913 AND 1914, AND JULY 31, 1922

Item	1912	1913	1914	1922
Crop of previous season . . . .	16,109,349	14,090,863	14,613,964	8,351,393
Total cotton supply of United States . . . . .	17,896,226	16,275,734	16,492,408	16,074,637
Cotton exported . . . . .	10,681,758	8,800,966	8,914,839	6,316,121
Cotton consumed in United States . . . . .	5,367,583	5,786,330	5,884,733	6,548,853
In cotton-growing states . . . .	2,712,223	2,960,518	3,023,415	3,977,847
In other states . . . . .	2,655,360	2,825,812	2,861,318	2,571,006
Cotton destroyed by fire . . . .	70,000	40,000	45,000	125,000
Cotton on hand at end of year	1,776,885	1,648,438	1,647,836	3,084,663
In mills of cotton-growing states . . . . .	241,611	234,509	213,418	583,446
In mills of other states . . . .	629,035	543,649	537,801	773,465
In public storage places . . . .	556,239	495,280	576,617	1,542,752
Elsewhere (estimated) . . . .	350,000	375,000	320,000	185,000

<sup>1</sup> As reported by U. S. Bureau of the Census.

portion still comprised 37.6 per cent of the total. The rapid rise of the cotton-manufacturing industries in other countries, since the later nineties, however, reduced the relative preponderance of the British market. Nearly 30 per cent of the total exports were destined to Germany, 11 or 12 per cent to France, and smaller quantities to a wide range of foreign markets extending from Italy, Spain, Belgium, Austria-Hungary, the Netherlands, and Russia in Europe, to Canada and Mexico in the Western hemisphere, and to Japan, China and India in the Orient. Owing largely to irregularities in the available supply of East Indian cotton which is the chief source of supply for Japanese mills, the exports to Japan have been subject to violent fluctuation.

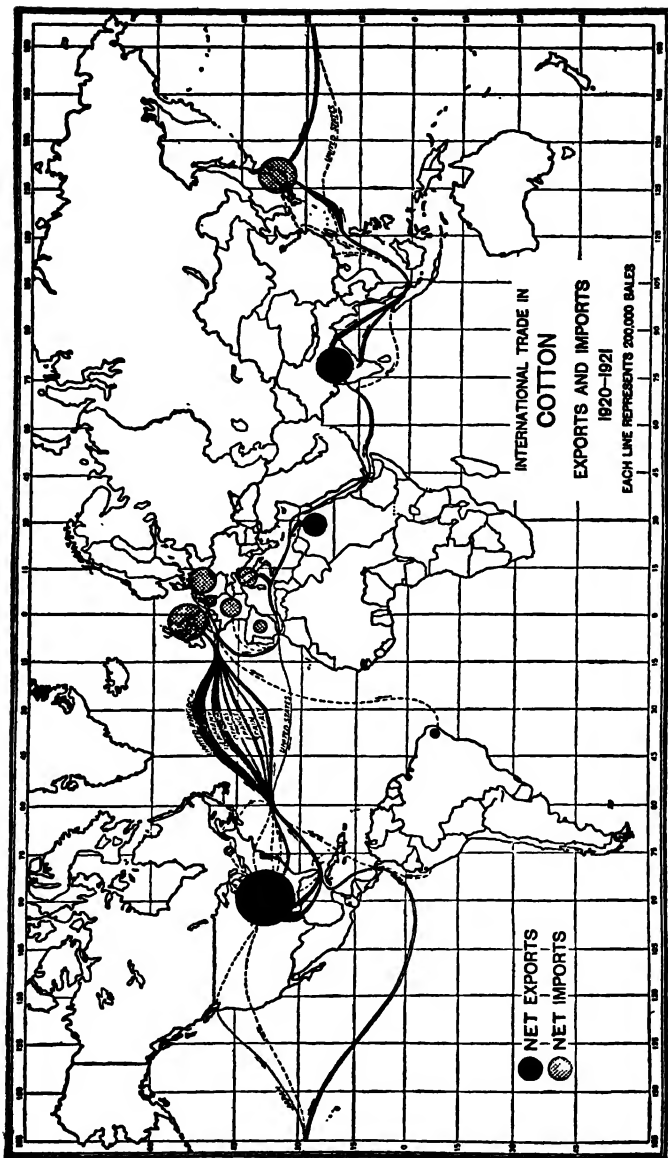
<sup>1</sup> Returns of Bureau of Foreign and Domestic Commerce for Fiscal year Ending June 30th.

All but 12 or 13 per cent of the cotton exports are shipped from the ports of the cotton-growing states. Galveston, alone, exports about three million bales annually, and the three principal cotton ports—Galveston, New Orleans and Savannah—handle over 75 per cent of all cotton exports. The remainder is exported principally from New York and other North Atlantic ports, from Norfolk, Wilmington (N. C.), Charleston, Brunswick and Mobile and from Seattle, San Francisco, Los Angeles and San Diego. The movement of export cotton from the United States and other exporting countries to the various foreign markets during the year 1920–1921 is shown graphically in Map No. X.

**Shipments to Northern Mills.**—Of the 5,400,000 to 6,500,000 bales of cotton consumed by domestic mills in recent years (*See* Table VIII), from 2,250,000 to 2,600,000 bales, or less than one half, were consumed in the mills of New England and other northern states.

These shipments to northern mills are made over two general routes—"overland" and coastwise. From 44 to 47 per cent of the total shipments in the crop-years 1912–1913 and 1913–1914 were made over the former route, the railroad freight rates being so arranged that cotton can readily move direct to northern mill centers. Cotton moving northward by rail passes through the various so-called "northern gateways" such as St. Louis, Hannibal, Cairo, Louisville, Cincinnati, Rock Island, Parker and other cities lying mainly on the Ohio and Potomac rivers. The coastwise route, which for many years handled the bulk of the northern cotton shipments, still handled over one half of them—56 and 53 per cent respectively in the years 1912–1913 and 1913–1914. Cotton is regularly shipped northward from each of the southern ports mentioned in connection with the cotton export trade.

**Consumption by Southern Mills.**—So rapid has been the rise of the cotton-manufacturing industry in the cotton-growing states that they have in recent years consumed from three to nearly four million bales, or more than the total mill consumption of the New England and other northern states (*See* Table



Prepared by U. S. Department of Agriculture.

MAP X.—THE INTERNATIONAL TRADE IN COTTON, 1920-1921.

VIII). Southern mills consume but small quantities of foreign cotton because they require less high grade, long-staple cotton, such as is imported from Egypt by the northern mills. The southern mills are especially important as spinners of yarn, a part of which is woven in the South and the remainder of which is used in the northern textile industries.

#### DIRECT SHIPMENTS

About one half of the cotton purchased from the growers at the many local cotton markets of the South is shipped directly from the local shipping points to the southern and northern mills or to the ports of shipment without first moving through the large central markets of the interior. Much of the cotton shipped directly to the ports, moreover, has been billed to northern mills or foreign importing concerns, and merely passes through the ports in transit. This is particularly true when the cotton locally purchased is to be applied on a contract already booked.

**Marking and Tagging.**—Before the cotton leaves the local shipping points the bales are tagged with the same mark, such as “Hark,” which they retain thereafter throughout their journey to the mills. While deliveries may be made on cotton contracts by grade, as in the case of grain, the cotton after it leaves the growers does not lose its identity as grain which is stored in bulk usually does.

**Compressing Flat Bales.**—Cotton shipped direct from local points to mills or ports must in many cases be unloaded *en route* in order that the “flat” gin bales may be “recompressed” into bales of about one half their original thickness. The law as well as the carriers require this recompression at the first compress passed *en route* to port or other distant destination so as to facilitate shipment and economize railroad and steamship equipment. The compresses are usually owned and operated either by the railroads, by cotton-buying concerns, or special compress companies, but few gins as yet being equipped with compresses. Compression is so closely connected with the transportation

service that it is regulated by the state railroad commissions and by the Interstate Commerce Commission.<sup>2</sup>

The cars containing the flat bales are usually switched in on one side of the compress and those receiving the compressed bales are placed on the other side. Meanwhile compress receipts are issued, for during the busy season fifteen or more days may pass before the cotton is finally loaded out of the compress. These receipts, a copy of which is reproduced in Form No. 15, are accepted by bankers as security for loans, and when cotton is sold at the compress, a transfer of the receipts constitutes a delivery. In many cases the cotton is shipped to the compress on local bills of lading and at local rates, with the understanding that upon satisfactory presentation of proof of reshipment the difference between the local rates and the relatively lower through rates will be refunded to the shippers. When the receipt is returned the compress superintendent issues a "clearance" such as is shown in Form No. 16, after which the compressed bales may be forwarded to destination. Upon delivery of the recompressed bales, the compress usually collects a small charge for compressing directly from the railroad which either absorbs this charge in its freight rates or collects it from the shipper or consignee as a special charge. Compression in transit resembles the milling-in-transit privilege mentioned in connection with the grain trade.

**Through Bills of Lading.**—On shipments made direct from compress to destination the railroad issues through railroad or export (rail-ocean) bills of lading. The shipping concern concentrates these bills at some point where it maintains an office and negotiates a draft drawn upon the buyer or the reimbursing bank designated by the buyer. To the draft are attached the though bill of lading, an invoice, and, if it is an oversea shipment, a marine insurance certificate.<sup>3</sup>

**Cotton Insurance.**—Some of the larger growers take the precaution to insure their crop, but the smaller farmers seldom insure their cotton until it is put into warehouses for storage.

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<sup>2</sup> See 29 I. C. C. Rep. 106; 30 I. C. C. Rep. 467, etc.

<sup>3</sup> See p. 441.

After the cotton has left the growers, however, it is regularly insured against loss by fire. Many merchants, exporters, brokers or factors carry policies which cover all the cotton purchased

No.....367

Mart, Texas,--

\_190

Received from--

\_Bales Cotton

For Account of--

NOT RESPONSIBLE IN CASE OF FIRE

This receipt must be returned before clearance will be issued

MART COMPRESS CO.

Per\_\_\_\_\_

FORM XV.

or handled by them, the insurance companies being notified each night of the amount of the day's purchases and sales. Usually at the end of each month the company presents a bill for premiums based upon the amount of cotton insured during the month. Cotton exported to oversea countries is, moreover,

Received of--

\_Bales cotton to be pressed and delivered to the I. &amp; G. N. E. R. for shipment

Patches

\_\_\_\_Bales  
 \_\_\_\_Bales  
 \_\_\_\_Bales  
 \_\_\_\_Bales  
 \_\_\_\_Bales

MART COMPRESS CO.

\_Sep't

FORM XVI.

covered by a marine insurance policy from the time that it reaches ship's side, the premium to be paid either by the seller or buyer according to whether the cotton is sold on c. i. f. or f. o. b. terms.

## INTERIOR POINTS OF CONCENTRATION

While about one half of the cotton is shipped direct from local shipping or compress points to local mills, seaports or outside destination, the other half is concentrated at the central cotton markets of the interior, or so-called "interior points of concentration." As shown on Map No. XI there are thirty-five or more of these inland markets, the largest of which, from the standpoint of cotton receipts are Houston, Texas; Memphis, Tennessee; St. Louis, Missouri; Augusta and Atlanta, Georgia; Cincinnati, Ohio; Greenville, S. C.; Little Rock, Arkansas; Columbia, South Carolina; Macon, Georgia; Shreveport, Louisiana; Fort Worth, Texas; Atlanta, Georgia; Pine Bluff, Arkansas; Paris, Texas; Greenwood, Miss.; Dallas, Texas; Clarksdale, Miss.; and Montgomery, Alabama. Among the interior markets are several of the "northern gateways," which are points of concentration as well as points through which overland shipments pass in transit.

**Sources of Supply.**—A part of the cotton received at the large interior markets is merely unloaded to be recompressed, but the bulk of it is shipped there by exporting houses and brokers for resale, and is consigned by local merchants and growers to the factors located at these points or is hauled there by growers from the surrounding community. The largest amount of concentration is done by the large exporting houses who do not limit their local purchases to orders on hand but buy all the cotton they are able to obtain at current prices. Whatever they can apply on contracts already booked, they ship direct to destination, and the remainder they store in the large warehouses at the interior points of concentration.

**Functions.**—The larger interior points are not only places at which cotton is held until it has been sold for shipment to spinners or foreign importers, but they are central cotton markets. They provide facilities for the storage, weighing, compressing, sampling, grading and inspection of cotton. They provide a market for the sale and resale of cotton, and it is there that cotton bales sold for shipment are "patched" as in

**COTTON RECEIPTS AT PRINCIPAL MARKETS.  
AND EXPORTS FROM PRINCIPAL PORTS  
AVERAGE OF SEASONS 1914-1915 TO 1919-1920**

**LEGEND:**

- COTTON RECEIPTS AT PRINCIPAL MARKETS
- FUTURE MARKETS
- △ EXPORTS FROM PRINCIPAL PORTS
- OTHER COMPENSATING LAJANE
- △ COTTON RECEIPTS
- PORTS OF EXPORT NET MARKETS

**AVERAGE RECEIPTS OF COTTON IN BALES**

MARKET	1914-15	1915-16	1916-17	1917-18	1918-19	1919-20
San Francisco	1,200,000	1,300,000	1,400,000	1,500,000	1,600,000	1,700,000
Portland	1,100,000	1,200,000	1,300,000	1,400,000	1,500,000	1,600,000
Seattle	1,000,000	1,100,000	1,200,000	1,300,000	1,400,000	1,500,000
San Diego	900,000	1,000,000	1,100,000	1,200,000	1,300,000	1,400,000
Los Angeles	800,000	900,000	1,000,000	1,100,000	1,200,000	1,300,000
San Jose	700,000	800,000	900,000	1,000,000	1,100,000	1,200,000
San Bernardino	600,000	700,000	800,000	900,000	1,000,000	1,100,000
San Luis Obispo	500,000	600,000	700,000	800,000	900,000	1,000,000
San Mateo	400,000	500,000	600,000	700,000	800,000	900,000
San Francisco Bay	300,000	400,000	500,000	600,000	700,000	800,000
San Francisco Bay Area	200,000	300,000	400,000	500,000	600,000	700,000
San Francisco Bay Area	100,000	200,000	300,000	400,000	500,000	600,000

**AVERAGE EXPORTS**

PORT	1914-15	1915-16	1916-17	1917-18	1918-19	1919-20
San Francisco	1,200,000	1,300,000	1,400,000	1,500,000	1,600,000	1,700,000
Portland	1,100,000	1,200,000	1,300,000	1,400,000	1,500,000	1,600,000
Seattle	1,000,000	1,100,000	1,200,000	1,300,000	1,400,000	1,500,000
San Diego	900,000	1,000,000	1,100,000	1,200,000	1,300,000	1,400,000
Los Angeles	800,000	900,000	1,000,000	1,100,000	1,200,000	1,300,000
San Jose	700,000	800,000	900,000	1,000,000	1,100,000	1,200,000
San Bernardino	600,000	700,000	800,000	900,000	1,000,000	1,100,000
San Luis Obispo	500,000	600,000	700,000	800,000	900,000	1,000,000
San Mateo	400,000	500,000	600,000	700,000	800,000	900,000
San Francisco Bay	300,000	400,000	500,000	600,000	700,000	800,000
San Francisco Bay Area	200,000	300,000	400,000	500,000	600,000	700,000
San Francisco Bay Area	100,000	200,000	300,000	400,000	500,000	600,000

COTTON		AVERAGE EXPORTS	
UNIT	MAINT	MAINT	MAINT
Colombia, Per	1,200,000	1,200,000	1,200,000
Costa Rica	1,200,000	1,200,000	1,200,000
Guatemala	1,200,000	1,200,000	1,200,000
Honduras	1,200,000	1,200,000	1,200,000
El Salvador	1,200,000	1,200,000	1,200,000
Nicaragua	1,200,000	1,200,000	1,200,000
Panama	1,200,000	1,200,000	1,200,000
Paraguay	1,200,000	1,200,000	1,200,000
Peru	1,200,000	1,200,000	1,200,000
Puerto Rico	1,200,000	1,200,000	1,200,000
Uruguay	1,200,000	1,200,000	1,200,000
Venezuela	1,200,000	1,200,000	1,200,000
Other	1,200,000	1,200,000	1,200,000
Total	1,200,000	1,200,000	1,200,000

[illegible]

Prepared by U. S. Department of Agricultural.  
MAP XI.—CENTRAL COTTON MARKETS AND PORTS OF EXPORT.



the case of those shipped direct to destination from local compresses. At some of the largest interior markets, cotton exchanges have been organized and rules have been laid down for the conduct of the spot cotton trade. The larger markets publish daily cotton prices which are viewed not only by the dealers at these markets, but by spinners and outside cotton merchants, by local buyers, and by the growers. While in the main these prices follow the prices at which future contracts sell in New York, New Orleans and Liverpool, they do not follow them when the futures sell at an abnormal discount. In this way the spot markets of the larger interior towns, together with those which are located at the larger ports, sometimes affect the prices paid to the growers of cotton.

**Extent of Competition.**—There is more competition between these central cotton markets than there is between the primary grain markets, for they are more numerous, the districts from which they receive their supply are less definite, and the total supply of cotton is relatively smaller. There is, moreover, considerable competition within some of these markets, the range of buyers being wider than in the primary grain markets.

**Purchase of Cotton from Growers, Local Merchants and Factors.**—On the important market days nearby growers frequently haul their cotton direct to the cotton yards of the interior points of concentration and sell it at current prices. Growers as well as country merchants located at a distance usually consign it to factors or commissionmen who may sell it immediately or store it in warehouses which are owned by the railroads, cotton buyers, warehouse companies, or in some cases by coöperative concerns. The factors usually obtain a commission of about 2½ per cent for buying or selling cotton. The selling at some of the central markets is done in accordance with rules laid down by the spot exchanges of which the various buyers are members, and, where no exchange has been organized, the trading is nevertheless conducted in accordance with trade custom.

The cotton may be sold to the central market buyers in various ways:

1. Cotton in the yards or warehouses is sold on the "spot," that is, samples are extracted from the bales and the sale is based on them.

2. It may be sold "to arrive" in which case the cotton is sold at the central market before it arrives there from the local shipping points. Such sales may be made on the basis of samples, by grade or "description" or by a combination of both sample and grade. The samples are sometimes guaranteed by the seller, but in any event if the cotton sold does not agree with the samples or grades provided by the seller, the buyer may insist upon a readjustment of terms or under certain conditions, as provided by the rules applicable in the various markets, refuse to receive the cotton when it arrives.

3. Cotton may also be sold on f. o. b. terms, for delivery either at the central market or at a designated port. In Houston, Texas, for example, cotton may be sold for delivery f. o. b. barge or railroad at Houston or ship at Galveston. When sold for delivery at a point beyond the central market, the cotton is said to be sold "in transit." The f. o. b. sale differs from the usual "to arrive" sale in that the latter requires the delivery of the cotton on the spot at the central market, the seller paying all delivery costs, while the former sale is made at a price which includes delivery charges. On shipment from a local shipping point an f. o. b. sale requires the buyer to pay the railroad freight rate, compress fees, drayage and other delivery charges except such as may be otherwise agreed upon or provided for in the exchange rules.

### COTTON RECEIVING PORTS

Although the principal cotton-exporting ports have been mentioned in connection with the export trade, it should be noted that the export trade by no means portrays the volume of cotton handled at the various cotton-receiving ports. The coast-wise as well as the cotton-export trade is handled at the ports. Some of their receipts come directly from local shipping or compress points, and others from the interior points of concentration. Some cotton passes through them in transit, some

is placed in storage, some is handled on through bills of lading, some is rebilled at the ports, and some is used in local mills.

They annually receive from 70 to 75 per cent or more of the total cotton crop. Their net receipts—the amount of domestic cotton received which has not been transshipped from one port to another and already included in the receipts of the first receiving port—comprised 6,403,000 running bales during the crop-year 1921–1922.\* The principal individual receiving ports are Galveston, New Orleans, Savannah, Norfolk and Newport News, Charleston, Port Arthur and Texas City, Brunswick, Wilmington (North Carolina), and Mobile. Certain of the northern ports, such as New York, Baltimore and Boston, from which appreciable quantities of cotton are yearly exported, receive but small quantities directly from the interior of the cotton belt. On the Pacific Coast the principal cotton ports are San Francisco, Cal. and Port Townsend, Wash. (*See Map No. XI*)

**Functions of Receiving Port.**—First of all the cotton-receiving ports are shipping centers, and are therefore equipped with docks and wharves where the vessels of the world may obtain the cotton which is drayed or otherwise conveyed from the freight yards or from warehouses to the waterfront. They are also points of concentration, for cotton is shipped to ports as well as to the large interior towns to be held for final sale and shipment, and they are, therefore, equipped with warehouses and cotton yards. They are cotton markets at which all such cotton as has not been sold for shipment in the interior may be bought and sold. Cotton hauled there by nearby farmers, or shipped from the interior by growers or interior buyers, is disposed of by methods similar to those prevailing at the central markets of the interior. Being markets and shipping centers they have rules and facilities for the weighing, inspection and grading, sampling, patching, tare, and delivery of cotton bales. At some of them cotton exchanges have been organized so that the sale and handling of cotton may be conducted in a uniform and orderly manner. As in

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\* Report of New Orleans Cotton Exchange.

case of the large interior centers, the great exporting houses either have branch offices or buying representatives at the principal receiving ports.

With one exception all the port as well as interior cotton exchanges constitute spot markets. Many of the dealers at these markets regularly hedge their cotton transactions, but they do so on the speculative exchanges of New York, New Orleans or Liverpool. It is to be noted, however, that one of the largest receiving ports—New Orleans—is equipped with an exchange where cotton futures as well as spot cotton are regularly bought and sold.

#### SALE OF COTTON TO DOMESTIC MILLS

**Manner of Sale.**—The northern cotton mills purchase their supply of cotton from the export houses, brokers or other cotton merchants who obtain it at the local markets, the interior points of concentration (including certain northern gateways) or at the receiving ports. These merchants usually have offices in the large northern cities and agents at numerous mill centers; indeed the main offices of many of the largest cotton houses are in New York. The mill treasurers usually buy on the basis of samples which these agents submit for inspection although they sometimes purchase by grade or description. When the cotton arrives at the mills it is in many cases tested by experts, and if it is of lower grade than the sample the seller is required to make restitution to the mill.<sup>5</sup> It is important that the right cotton be purchased, because the mills are engaged in the manufacture of yarn, cloth or other textiles requiring particular grades of cotton. It is for this reason chiefly that the mills do not purchase their supply on the large speculative exchanges, where the grades do not fully account for length or fineness of fiber, and where the contracts permit the delivery of numerous grades. They use the speculative exchanges principally as a price barometer, and in some cases, for hedging

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<sup>5</sup> M. T. Copeland, *Cotton Manufacturing Industry of United States*, p. 180.

purposes. The methods of purchase in the southern mill centers differ from those of the northern mills, only in that they buy directly from cotton growers as well as from merchants.<sup>6</sup>

**Terms of Sale.**—The terms of the contract which the northern mills enter into with the cotton merchants are various. They may contract for full delivery at a specified time, or in monthly installments. The contract may, moreover, require delivery either on c. i. f. or f. o. b. terms. The former requires the merchant to deliver the cotton at the mill for the agreed price; while the latter, as in the case of shipments from local points in the South to the central cotton markets of the interior or the ports, requires him to deliver it free on board railroad car or vessel. The spinner, in case of an f. o. b. purchase is required to pay all railroad, steamship, compressing, insurance and other shipping charges, unless some of them are especially assumed by the merchant in the contract. At well-organized markets, f. o. b. prices are regularly quoted not at a fixed number of cents but at a given number of points “on” the current quotation of futures.

The spinners may also purchase on so-called “spinner’s call” terms, that is, the cotton merchant allows the spinner to call for a specific grade of cotton at a stipulated number of points “on” the actual price of futures at any time which the spinner may elect to name between the making and the maturity of the contract.<sup>7</sup> The actual price in such a purchase is not fixed until the spinner “calls,” and it is then the price of the cotton futures of the month mentioned in the contract plus an agreed number of points. The spinner is usually required to “call” at least fifteen days before the shipping month.

**Time of Sale.**—The northern spinners usually buy about one half of their annual supply before January first and over 60 per cent before February first. Most of the supply, moreover, is shipped as soon as it is purchased, is stored in the private warehouses of the mills, and paid for within three days after delivery. Although the spinners can insure the risk of a change

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<sup>6</sup> See Chap. VI, p. 139.

<sup>7</sup> U. S. Bureau of Corporations, *Cotton Exchanges*, Part I, p. 106.

in the price of cotton by hedging on the speculative exchanges, they prefer to buy their supply early and carry it themselves, rather than to purchase later at prices which ordinarily include the cost of storage in public warehouses, or to run the risk of being unable to obtain the particular grade of cotton desired. The spinners of fine yarn are especially apt to purchase early in the season.

The time of purchase by the southern mills varies more widely than that in the northern states. The relatively few which require long-staple cotton follow the same practice as their northern competitors. The practice of those which use short-staple cotton "depends upon the location, size, and financial strength of the individual mills."<sup>8</sup> On the whole they buy a somewhat smaller proportion of their supply during the picking season, for some of them have less available capital, and in some places they are able to draw upon cotton remaining in the hands of nearby growers. Some of the smaller mills, with very little available capital, buy only as they obtain orders for yarn or cloth.

#### SALE OF COTTON IN FOREIGN MARKETS

**Methods of Sale.**—The methods of selling cotton to foreign buyers varies in each of the three principal European markets for American cotton—Great Britain, Germany and France.<sup>9</sup>

The American cotton exported to Great Britain is mainly sold or consigned by American exporting houses and brokers directly to Liverpool or Manchester importing merchants. Some American exporters, however, have branch houses in England to handle their sales, and some Liverpool and Manchester houses send buying agents to the large spot markets of the South. The Liverpool importing merchants usually sell the cotton by sample through two brokers—a selling and a buying broker—who stand between the merchants and spinners and receive a commission of  $\frac{1}{2}$  per cent each. Though Liverpool is the principal British

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<sup>8</sup> Copeland, p. 182.

<sup>9</sup> Copeland, pp. 354–360.

market, some of the cotton is handled by Manchester importing merchants, who ordinarily deal directly with the spinners.

American cotton used in Germany is sold mainly in Bremen, to a lesser extent in Hamburg and before the war, also in Havre, France. Some cotton is sold direct to German spinners, and some is consigned to commissionmen, but the bulk of it is sold to Bremen importing merchants who sell to the mills through agents. The agents, who receive a commission for their services, usually represent several cotton merchants who as far as possible are noncompeting.

The leading French market for American cotton is at Havre, where the exporters usually sell either to importers or merchants, the cotton in many cases being sold to importers who in turn sell it to cotton merchants. The sales are made through selling and buying brokers, and the official quotations and sales are recorded by so-called sworn brokers, each of the brokers receiving a commission of  $\frac{1}{4}$  per cent. The cotton merchants sell to spinners at the mill centers through agents who are paid commissions of from  $\frac{1}{2}$  to 1 per cent.

The cotton importers and merchants in each of these countries commonly hedge their transactions, those of England and Germany chiefly on the Liverpool and New York Exchanges, and those of France chiefly on the Havre Exchange. The spinners of Germany and France also hedge in many cases, while those of England do so less frequently, the difference being due to the fact that in England the cotton supply is held largely by the importing merchants, the mills usually keeping but small quantities in their own warehouses, while in Germany and France as in the United States the spinners buy a larger share of their year's supply early in the season.

**Terms of Sale.**—The sales by American exporters to foreign importers, merchants or mills are made on contracts similar to those entered into with American spinners, except that a larger proportion are made on c.i.f. terms, and that the sales are based on net instead of gross weight. The common practice is to require the exporter to deduct 6 per cent from the invoice to

cover tare, the cotton being sold on so-called c.i.f. and 6 per cent terms.

The tare rules of the various countries are essentially confusing and give an element of uncertainty to the foreign sales. While the flat gin bales of the growers usually contain from 19 to 24 pounds of tare, the 6 per cent rule practically compels the exporters to add sufficient patches to increase the tare of a 500-pound compressed bale to 30 pounds. It is owing to this practice that the exporter is sometimes said to make his profit out of the "patches" which he adds to the bale. Such a profit, however, is indefinite and contingent, for competition may in some cases require him to share it with the grower or local merchant, and the tare rules of the foreign markets permit the foreign buyer to present a claim for tare in excess of fixed weights which are different in the various foreign markets but which come roughly to about 26½ pounds on a 500-pound bale. The rules provide detailed methods for the ascertainment of actual tare by physical tests, and when such tests are made the buyer may present a claim for the 31½ pounds or other excess tare.<sup>10</sup> Since the making of a physical test requires time, the foreign buyer, if he is in a hurry to receive the cotton, may either waive a claim, or agree to an arrangement providing for "friendly allowances," that is, the buyer may agree to a deduction which is smaller than the actual over-tare. If he is not anxious to receive the cotton quickly he may insist upon a physical test. In order to protect himself from the possibility of loss resulting from the 6 per cent and physical test rules applied in foreign markets, the exporter endeavors when possible to take account of the value of this discrepancy in the price that he charges the foreign buyer.<sup>11</sup>

C.i.f. and 6 per cent contracts sometimes contain a so-called "franchise" clause, providing for a guarantee that the invoice weights will not exceed the weight of the cotton upon arrival at the foreign market by more than 1 per cent. Weights frequently vary because of differences in atmospheric conditions,

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<sup>10</sup> U. S. Bureau of Corporations, *Cotton Tare*.

<sup>11</sup> *Ibid.*, p. 28.



and if such variation reduces the weight by more than 1 per cent, the foreign buyer may present a claim for the excess. Since the American shipper is not allowed a similar claim for an increase in the weight of the cotton, he in many cases adds 1 per cent to the actual weight when he makes out his invoice. Both the tare and franchise rules have at times led to abuses in the cotton trade.

#### THE MAKING OF COTTON PRICES

**Spinners' and Importers' Prices.**—As the prices paid to the growers are usually based upon the price of future contracts at the great speculative exchanges,<sup>12</sup> so also are the prices at which the cotton is sold to the mills or foreign importers based principally upon the price of futures. The prices at which the cotton is sold to the domestic mills or in foreign markets are usually calculated at a certain number of cents or points "on" the price of futures and the difference is sufficient to cover all shipping and handling costs, uninsured risks, and a profit on the transaction. The prices paid to the growers and those received from the spinners and foreign importers are of course inseparably interdependent, and it is the farmer's price which frequently bears these costs, uninsured risks and profits, because conditions of supply and demand are often favorable to the buyers. In order that the cotton shippers may do business profitably the difference between the prices which the growers receive and those which the spinners or foreign importers pay must be sufficient to cover all of these items.

Cotton shipping costs, which differ according to the point of origin and destination, the manner of shipment and other considerations may include any or all of the following items: freights from the interior, compressing charges, ocean freights, fire and marine insurance, wharfage and dock dues, storage, weighing, sampling, and inspection fees, brokerage and commissions, exchange supervision, weight franchise, foreign exchange brokerage, patching and repairing bagging, interest, and expenses

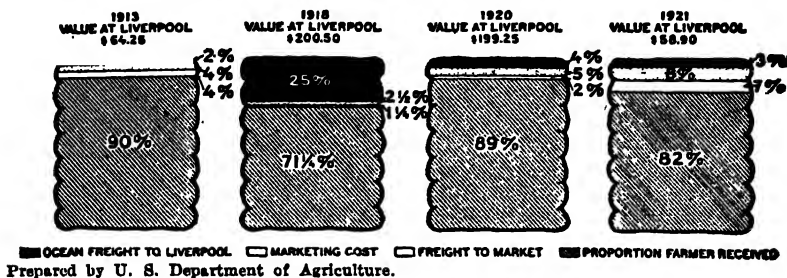
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<sup>12</sup> Chap. VI, pp. 143 to 148.

of doing business such as wages, salaries, telegraph and cable charges.

During normal pre-war years the total shipping and marketing costs on a shipment of cotton from the interior of the cotton belt to Liverpool amounted to 1 or 1½ cents per pound, and to New England mills probably less than 1 cent a pound. The

**APPROXIMATE DIVISION OF THE LIVERPOOL VALUE OF A BALE OF COTTON  
ON JULY 1, 1913, 1918, 1920, AND 1921.**



**DIAGRAM III.—DIVISION OF LIVERPOOL VALUE OF A BALE OF COTTON.**

violent changes, particularly in transportation costs, that have occurred since then are shown graphically by the Department of Agriculture in diagram No. III.

The main trade risks of the cotton exporter or broker are insured by hedging, but there may be certain additional risks such as his inability at times to hedge with exactness and uncertainties resulting from tare and franchise rules. All such uninsured risks are so far as possible either deducted from the farmer's price or added to the spinner's or importer's price.

**The Factors Affecting Future and Central Market Prices.**—The factors which enter into the price of future contracts, upon which the farmer's, spinner's, and importer's prices are mainly based, are essentially the same as those outlined in connection with the prices<sup>18</sup> paid for grain at the primary grain markets.

It is on the great cotton exchanges at Liverpool, New York and New Orleans that a world's cotton price is primarily de-

<sup>18</sup> See Chap. V, p. 111.

terminated. It is there that the cotton buyers and sellers of the world concentrate their judgment as to the supply of and demand for cotton. The various factors of supply and demand influencing the general level of cotton from one crop-year to another, differ from those mentioned in connection with the grain trade only in that the cotton trade is on the whole more competitive, that the foreign cotton market is more important, that the trade in raw cotton is free from tariff restrictions, and that the effect of crop pests is more widely felt than in the grain trade. The extent of the cotton-growing area affected by the boll weevil is shown in Map No. IX of the preceding chapter.

The spot cotton prices paid in the great spot markets, alike those at Liverpool, New York and New Orleans and those at other central spot cotton markets are usually based upon the price of future contracts. They do not, however, follow future contract prices blindly and the "limits" "on" or "off" applied in buying or selling spot cotton are changed frequently. When future contract prices, owing to the right to deliver numerous grades on a future contract, the failure to properly adjust grade differences, or for other reasons, sell at an abnormal discount, or when they are temporarily affected abnormally by manipulation, the spot prices at the central markets may become the real gauge of cotton values. At such times the prices paid to the growers and those received from the spinners and foreign importers, although based upon the price of futures, are adjusted with reference to the spot prices paid in the leading central markets.

**The General Level Spot Cotton Prices.**—As in the grain trade the general level of spot cotton prices may be measured by means of yearly average prices. Those of upland middling cotton in the New Orleans spot market may be regarded as representative of central market prices, for New Orleans is an important spot market as well as a market in which cotton futures are bought and sold. They are plotted in diagram No. IV which also shows world production and consumption, the American cotton crop and cotton exports from the United States from the pre-war crop-year 1913-1914 to 1921-1922. A brief statement of the

fluctuations and their principal causes during this period of rapidly changing conditions may make clear the forces influencing the general level of cotton prices.

The price advance began later in the cotton trade than in the

CHART IV.

COTTON. YEARLY PRODUCTION OF COMMERCIAL COTTON OF UNITED STATES AND OF THE WORLD.  
YEARLY MILL CONSUMPTION OF THE WORLD.  
YEARLY EXPORTS FROM UNITED STATES OF DOMESTIC COTTON AND LINTERS.  
YEARLY AVERAGE SPOT PRICE OF MIDDLING COTTON IN CENTS PER POUND AT NEW ORLEANS.  
YEARS CHARTED ARE FROM 1913-14 TO 1921-22 INCLUSIVE.

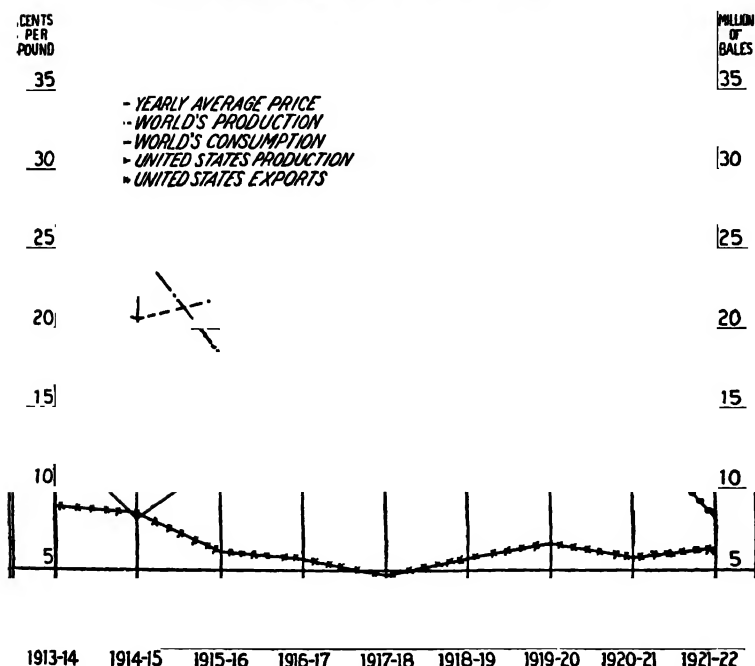


DIAGRAM IV.—YEARLY AVERAGE SPOT COTTON PRICES.

grain trade. Cotton prices declined during the crop-year of the United States and of the world as a whole in 1914-1915 because the cotton crop was large as compared with the preceding year, while the demand for cotton as measured by world consumption

and exports from the United States declined sharply. The next crop-year (1915-1916), however, witnessed the beginning of a rise which, subject to fluctuations, carried the general level of New Orleans spot prices to the unprecedented level shown in the diagram. The great price advance was due in part to the wider-spread inflation process which effected the prices of so many commodities during the war and particularly during the crop-year 1919-1920. In the cotton trade, however, price inflation worked hand in hand with world and United States cotton crops, substantially smaller than the crops produced before the war, and in 1919-1920 when the highest price level was reached, world consumption and exports from the United States advanced and there was an active demand for the better grades of American cotton.

The general level of cotton prices declined somewhat in the spring of 1920 but in August of that year a wider break occurred and prices continued generally downward until August of the following year. The price deflation process which had effected grain and many other products, was partly responsible, and supply and demand also forced prices downward. The world crop of 1920-1921 was somewhat smaller than the preceding crop, but there was an unusually large carry-over, while at the same time world consumption declined rapidly as the effects of the industrial depression spread into the textile industries, and exports to foreign markets receded.

The decline in prices was so pronounced and abrupt that heavy losses were suffered, particularly by growers whose costs of production were high and who ordinarily do not hedge against losses due to price fluctuations. The result was a marked reduction in acreage planted, and as the crop per acre was low during the crop-year 1921-1922 because of the boll weevil and other adverse conditions, the crop produced was the smallest since 1895. Cotton consumption, moreover, began to pick up and exports from the United States increased. Meanwhile price deflation in the cotton markets was halted; indeed the Government, acting through the War Finance Corporation provided funds for use in the cotton export trade. The general decline

in spot cotton prices was halted in August, 1921 and beginning in April, 1922 they advanced to such an extent that by the end of the crop-year 1921-1922 they were about 75 per cent above the pre-war price level of 1913-1914.<sup>14</sup>

**Movement of Spot Cotton Prices During the Crop-Year.**—The normal movement of spot cotton prices throughout the crop-year is also similar to that of grain prices in that it is usually adjusted early in the crop-year and then pursues a course which is substantially equalized. Prices are normally somewhat higher during the later months of the crop-year than during earlier months but the price difference is small in comparison with the seasonal differences in cotton marketings, ginnings, visible supply or other measures of the unequal supply of cotton during the early and late months of the crop-year. Monthly average prices of middling spot cotton at New Orleans during the crop-years 1913-1914 and 1914-1915, which are plotted in diagram No. V, show the extent to which the course of cotton prices is equalized during crop-years when unforeseen changes in important price determining conditions do not occur after the general price level for the crop has once been adjusted.

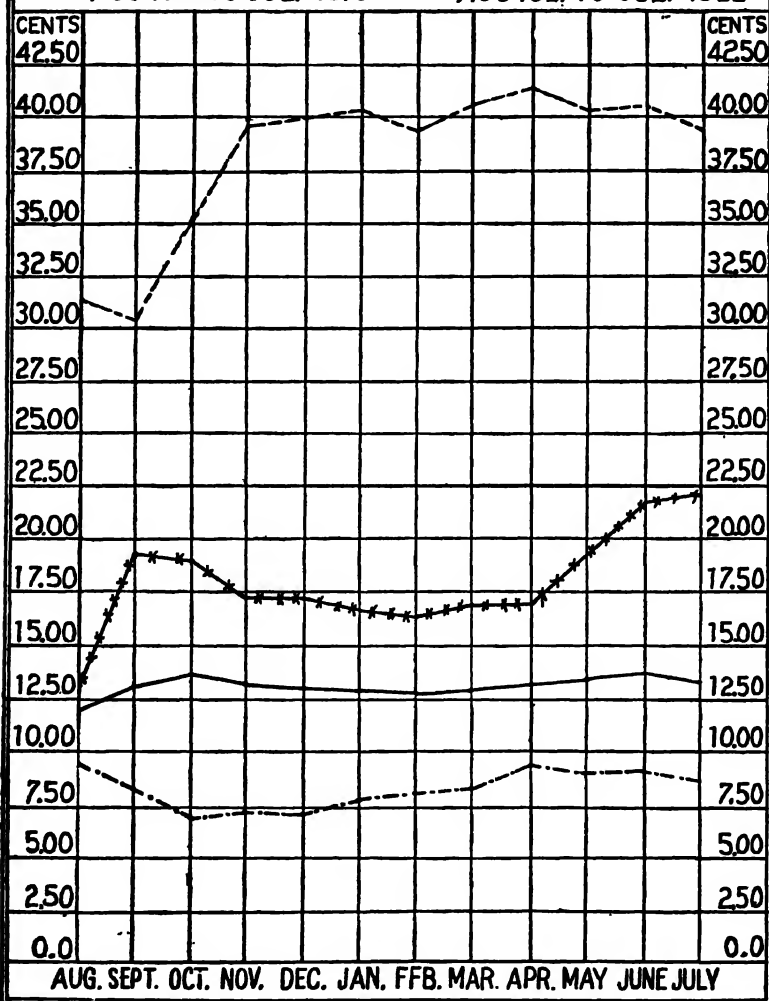
Although the great bulk of the crop reaches the cotton markets during the first six months of the crop-year there are various influences which normally tend to substantially maintain prices during those months. Many local and central market buyers are then in the market for all the cotton obtainable, some of it being purchased for immediate shipment and more for storage and gradual resale during later months. Many textile mills are also in the market then for more cotton than they need at the moment, those manufacturing the finer qualities of yarn or cloth being especially desirous of acquiring a supply of cotton of the particular qualities needed. Competition between buyers and between central spot markets is a potent force in determining the usual course of prices during a crop-year. The ability of these buyers to hedge their heavy spot purchases in the contract markets is also a factor for it reduces their risk and encourages the payment of spot prices probably higher than they would be

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<sup>14</sup> Federal Trade Commission, *Preliminary Report on the Cotton Trade*.

**COTTON: AVERAGE SPOT PRICE OF UPLAND MIDDLING COTTON, IN CENTS PER POUND, AT NEW ORLEANS, BY MONTHS.**

— AUG. 1913 TO JULY 1914    ---- AUG. 1919 TO JULY 1920  
 - - - - - AUG. 1914 TO JULY 1915    \*\*\*\*\* AUG. 1921 TO JULY 1922



**DIAGRAM V.—MONTHLY AVERAGE SPOT COTTON PRICES DURING THE CROP-YEAR.**

in the absence of hedging. Discounting of future conditions, moreover, is a feature of the speculative markets, and, although in basing spot cotton prices upon future contract prices the "limits" applied are changed frequently, spot prices are influenced to some extent by future contract prices.

The comparatively small price increase which normally occurs in the spot markets during the later months of the crop-year (See diagram No. V), is due at least in part to the carrying charges which gradually increase during the crop-year. It is also in line with the seasonal decline in the supply of cotton, although the price advance is by no means in proportion to the gradually declining supply.

The monthly average spot prices for middling cotton in the New Orleans market during 1919-1920 and 1921-1922, which are also plotted in diagram No. V, illustrate how cotton prices do not follow the normal crop-yearly course when unforeseen changes in important price determining factors occur after the general level for the crop-year has been adjusted. In such event a further readjustment of the general price level for the year occurs and the difference between prices during the early and later months of the crop year may be very wide. The price influences which were operative in 1919-1920 and 1921-1922 were referred to above.<sup>15</sup> Diagram No. V indicates that they were not fully discounted at the beginning of the crop-year and that the general level of cotton prices was readjusted during later months.

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[References designated by a \* apply also to chapter VI.]

## CHAPTER VIII

### RELATIONS BETWEEN SPECULATIVE EXCHANGES AND THE SALE OF FARM PRODUCE

One of the most striking characteristics of the trade in farm products during the last seventy-five years has been the organization of exchanges, and as the greatest produce exchanges are those in the grain and cotton trades, they may conveniently be discussed at this point in the organization of the trade in farm products. Exchanges are not, however, confined to the grain and cotton trades. Flour, provisions, flaxseed, timothy, clover and other grass and field seeds, hay and straw, hops and similar farm commodities are commonly bought and sold on the grain exchanges; cotton-seed products are dealt in on some of the cotton and grain exchanges; and some produce exchanges have branched out into nonagricultural commodities. The New York Produce Exchange for instance has rules for the purchase and sale of petroleum, oils, waxes and fats, and pig iron, although there is relatively little exchange trading in these commodities. Other agricultural industries in which exchanges have been organized are the live stock,<sup>1</sup> wool,<sup>2</sup> tobacco,<sup>3</sup> dairy products,<sup>4</sup> fruit<sup>5</sup> and vegetable industries, and special exchanges have likewise been organized for the purchase and sale of green coffee and raw sugar.

In one sense there is speculation in the purchase and sale of practically all agricultural staples whether on exchanges or otherwise, for many dealers and manufacturers and an increasing number of growers purchase or sell when in their judgment

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<sup>1</sup> Chap. X, p. 237.

<sup>2</sup> Chap. XI, p. 271.

<sup>3</sup> Chap. XII, p. 287.

<sup>4</sup> Chap. XIV, pp. 337, 348.

<sup>5</sup> Chap. XIII, pp. 309, 312.

the prices are the most favorable to their particular purposes. The term "speculation" when applied to produce exchanges, however, has a narrower and more specialized meaning in that it refers to the purchase and sale of contracts for future delivery or so-called "futures." In this sense the exchanges are known either as "spot" or speculative exchanges, the former confining their activities solely to a spot or "cash" business and the latter providing rules for the purchase and sale of contracts for future delivery as well as of spot produce. Among the purely agricultural industries it is mainly in the sale of wheat, oats, corn, rye, barley, flaxseed, and cotton that a regular trade in "futures" is conducted.

#### ORGANIZATION OF SPECULATIVE PRODUCE EXCHANGES

**Speculative Grain Exchanges.**—In the United States, modern grain exchanges began to be organized in the later forties of the nineteenth century. The Chicago Board of Trade was organized in 1848, the New York Produce Exchange in 1850, the St. Louis Merchants' Exchange in 1854,<sup>6</sup> the Kansas City Board of Trade in 1869, and the Minneapolis Chamber of Commerce in 1881. Grain exchanges have also been organized in Duluth, Milwaukee, Omaha, Toledo, Detroit, Buffalo, Philadelphia, Baltimore, Boston, and in nearly all the remaining primary and seaboard grain markets of the United States. Ten of the large grain exchanges conduct future as well as cash grain transactions.<sup>7</sup>

In Europe, the Antwerp Bourse was organized as a modern cash grain exchange as early as the middle of the sixteenth century.<sup>8</sup> The number of foreign exchanges, however, where grain futures are bought and sold, is limited, the principal foreign speculative grain exchanges being at Winnipeg, Liverpool, Paris, and Budapest. There is some speculation on the

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<sup>6</sup> Year when it assumed functions of a grain exchange.

<sup>7</sup> Grain futures are now being sold on exchanges at Chicago, Minneapolis, Duluth, Milwaukee, Kansas City, St. Louis, Toledo, Baltimore, San Francisco and Los Angeles.

<sup>8</sup> S. S. Huebner, in the *Annals of the American Academy of Political and Social Science*, Sept., 1911, p. 1.

Berlin grain exchange but the sale of grain futures there as elsewhere in Germany is hampered by law.

**Speculative Cotton Exchanges.**—The Liverpool Cotton Association was organized in 1842, the New York Cotton Exchange in 1870, and the New Orleans Cotton Exchange in 1871. A limited volume of futures is also sold on the Havre and Hamburg cotton exchanges, but most of the organized speculation in cotton is conducted on the great exchanges at Liverpool, New York and New Orleans. Trading on the Bremen Cotton Exchange, which is the leading German cotton market, is confined to spot transactions, and the speculation in futures at Hamburg is limited, for the sale of cotton futures in Germany is legally restricted to contracts "for actual delivery." One of the reasons, likewise, why none of the cotton exchanges<sup>o</sup> located in the American cotton belt, with the exception of the New Orleans Cotton Exchange, are future markets, is that the sale of cotton futures is legally prohibited in many of the southern cotton states.

**Corporate and Business Organization.**—The large grain and cotton exchanges of the United States are regularly incorporated associations. They have the usual corporate officials, such as a president, one or more vice-presidents, a secretary and treasurer, and a board of directors or managers. Members of the exchanges hold certificates of membership which upon payment of the required transfer fee are transferable to any person eligible to membership who is not opposed by the board of directors. The holder of such a certificate is said to hold a seat on the exchange. While the methods of election to membership vary the rules of the Chicago Board of Trade are perhaps typical. These rules provide that:

Any male person of good character and credit, and of legal age, on presenting a written application indorsed by two members, and stating the name and business association of the applicant, after ten days' notice of such application shall have been posted on the bulletin of the exchange, may be admitted to membership upon approval by at least ten affirmative ballot votes of the board of

<sup>o</sup> Spot cotton exchanges have been organized at Houston, Memphis, Little Rock, Augusta, Charleston, Galveston, Mobile, Natchez, Vicksburg, Savannah, Selma, Shreveport, St. Louis, Norfolk and Portsmouth.

directors, provided that three negative ballot votes are not cast against such applicant, and upon payment of an initiation fee of twenty-five thousand dollars, or on presentation of an unimpaired or unforfeited membership, duly transferred, and by signing an agreement to abide by the rules, regulations and by-laws of the association, and all amendments that may be made thereto.

The membership of any large grain or cotton exchange comprises a wide range of business men who are interested in the purchase, sale, storage, elevation, shipment, exportation, manufacture, insurance, transportation or financing of the commodities dealt in on the exchange.<sup>10</sup>

In order to conduct their business expeditiously the exchanges are equipped with numerous committees. Each exchange has an arbitration committee to adjust disputed claims between members, and a committee of appeals to review such cases as may be appealed from the arbitration committee. Though the exchanges differ as to their other committees they ordinarily have committees for complaints, finance, floor, membership, trade or rules, transportation, house, information and statistics, law, real estate or rooms and fixtures, and quotations. They may also have committees, bureaus or departments to supervise or perform specific duties in connection with weighing, inspection, sampling and grading, inspection of elevators or warehouses, registration of warehouse receipts and other special matters. Exchanges on which various commodities are bought and sold may have special committees, bureaus or departments in charge of the trade in particular commodities such as grain, provisions or flour.

An important link in the organization of some of the speculative exchanges is the clearing house in which contract margins are cleared at the close of each day's business session. In order to protect both parties to a future contract the exchanges authorize the buyer and seller to require the deposit with some designated exchange official, approved bank or clearing house of a margin equivalent to 10 per cent or other proportion of the market price. The concerns which have become members of the

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<sup>10</sup> For membership of New York Produce Exchange see *The Annals of the American Academy of Political and Social Science*, Sept., 1911, p. 218.

clearing house, instead of calling upon each other individually for margins, may settle with the clearing house at a certain time each day after all their various trades have been checked.

The produce exchanges do not themselves deal in grain, cotton or other farm staples, all buying and selling being done by the individual members. The exchanges merely provide the trading rules, supervise the trading in various ways, provide rooms where it may be conducted, adjust disputes and perform various other necessary functions. The income of the exchanges is not derived from the purchase or sale of cotton or grain by them, but from rents, buildings, investments, membership dues, the sale of price quotations or similar sources, and in some instances from inspection or other fees for services rendered.

### FUTURE CONTRACTS

Since a produce exchange is said to be a speculative exchange if it authorizes the sale of future contracts it is desirable to define and describe such so-called "future" transactions somewhat more fully.

**Definition of Future Contracts.**—As was stated by the United States Bureau of Corporations, "the system of future trading in cotton, and, for that matter in other staples similarly dealt in, is based on contracts on the part of the seller to deliver, and, consequently, on the part of the buyer to receive, at a time subsequent to the making of the contract, a certain quantity of the product at a stipulated price. . . . A future transaction differs from a "spot" transaction in that the latter invariably represents goods actually on hand or instantly available at the time the contract is made, and, moreover, contemplates an immediate or an approximately immediate delivery."<sup>11</sup>

Future contracts are entered into not only on the speculative cotton and produce exchanges, but privately in nearly every line of business. A farmer may privately contract to deliver a given number of bushels of potatoes at a specified price and at a stated time in the future, a miller may similarly contract to deliver

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<sup>11</sup> Report on Cotton Exchanges, Part I, p. 36.

flour, a steel mill to deliver rails or plates, a contractor to complete a building. Strangely, such contracts when privately made are not regarded as speculative. The cotton and grain exchanges have adopted definite future contracts for use in speculative transactions and definite rules which their members are required to follow.

The official future cotton contract of the New Orleans Cotton Exchange for example, is as follows:

### CONTRACT

New Orleans,....., 19....

In consideration of one dollar in hand paid, receipt of which is hereby acknowledged ..... of the City of New Orleans, State of Louisiana, have this day sold to (or bought from) ..... of the City of New Orleans, State of Louisiana, 50,000 pounds, in about 100 square bales of cotton, growth of the United States, deliverable from approved storage places for cotton in the port of New Orleans, between the first and last days of ..... next, inclusive, excepting holidays as provided in Rule 40 of the Rules of the New Orleans Cotton Exchange for the transaction of the Future Contract business.

The delivery within such time to be at seller's option, in not more than two approved storage places, upon five business days' notice to the buyer, as provided by the rules of the New Orleans Cotton Exchange.

The cotton to be dealt with herein or delivered hereunder shall be of, or within, the grades for which standards are established by the Secretary of Agriculture, except cotton prohibited from being delivered on a contract by the fifth subdivision of Section 5 of the United States Cotton Futures Act, and no other grade or grades (subject to the United States Cotton Futures Act, Section 5, and subject to New Orleans Cotton Exchange inspection and classification) at the price of ..... cents per pound for Middling.

In case cotton of grade other than the basis grade should be delivered or tendered in settlement of this contract, the differences above or below the contract price which the receiver shall pay for such grades, other than the basis grade, shall be the actual commercial differences determined as provided in Section 6 of the United States Cotton Futures Act.

Either party shall have the right to call for a margin as the



variations of the market for like deliveries may warrant and which margin shall be kept good.

This contract is made in view of, and in all respects subject to, the United States Cotton Futures Act, Section 5, and to the By-Laws, Rules and conditions, not in conflict therewith, established by the New Orleans Cotton Exchange.

Signed.....

**The Cotton Futures Act.**—The purchase and sale of cotton futures in the United States is regulated by federal statute. The original Cotton Futures Act became a law on August 18, 1914 but was declared unconstitutional primarily on the ground that it was a revenue measure and therefore should not have originated in the Senate. It was later re-enacted, with certain changes, in the Cotton Futures Act of August 11, 1916, which regulates the form of futures dealt in on American cotton exchanges by providing that a tax of two cents per pound of cotton must be paid unless actual delivery is made or unless the contract conforms to various specifications. The most important contract provisions are those authorizing the so-called, Section Five Contract. Under this section as amended to date the tax does not apply if the future contract conforms to the following conditions:

1. It must be in writing plainly stating the terms of such contract and must conform to the rules and regulations made pursuant to the act.
2. Names and addresses of the seller and buyer must be specified.
3. It must be signed by the party to be charged or by his agent in his behalf.
4. It must specify the quantity of the cotton involved in bales or in pounds.
5. It must specify the basis grade for the cotton involved in the contract, which shall be one of the grades for which standards are established by the Secretary of Agriculture, except grades prohibited from being delivered. Middling shall be deemed the basis grade incorporated into the contract if no other basis grade be specified in the contract.
6. It must state the price per pound at which the cotton of such basis grade is contracted to be bought or sold.
7. It must state the date when the purchase or sale was made

and the month or months in which the contract is to be fulfilled or settled.

8. It must provide that the cotton dealt with therein or delivered thereunder shall be of or within the grades for which standards are established by the Secretary of Agriculture, except grades prohibited from being delivered on a contract.

9. It must provide that in case cotton of grade other than the basis grade be tendered or delivered in settlement, the differences above or below the contract price which the receiver shall pay for such grades other than the basis grade shall be the actual commercial differences, determined as prescribed by the act.

10. It must provide that cotton of the following descriptions shall not be delivered on, under, or in settlement of the contract:

(a) Cotton that is below the grade of low middling.

(b) If tinged, cotton that is below the grade of strict middling; if light or yellow stained, cotton that is below the grade of good middling; if spotted, cotton that is below middling; or if gray, cotton that is below good middling.

(c) Cotton that is less than seven-eighths of an inch in length of staple, or cotton of perished or immature staple.

(d) Cotton that is "gin cut" or reginned, or cotton that is "repacked," or "false packed," or "mixed packed," or "water packed."

11. It must provide that all tenders of cotton shall be the full number of bales involved therein. (Such variations of the number of bales may be permitted as is necessary to bring the total weight of the cotton tendered within the provisions of the contract as to weight).

12. It must provide that on the fifth business day prior to delivery, the person making the tender shall give to the person receiving the same, written notice of the date of delivery, and that on or prior to the date so fixed for delivery, and in advance of final settlement, the person making the tender shall furnish to the person receiving the same, a written notice or certificate stating the grade of each individual bale to be delivered and identifying each bale with its grade by means of marks or numbers.

13. It must provide that, in case a dispute arises between the person making the tender and the person receiving the same, as to the quality, or the grade, or the length of staple, of any cotton tendered under the contract, either party may refer the question to the Secretary of Agriculture for determination, and that such dispute shall be referred and determined, and the costs thereof fixed, assessed, collected, and paid in such manner and in accord-

ance with such rules and regulations as may be prescribed by the Secretary of Agriculture.

The act of 1916 also authorizes a so-called Section 6 A Contract, which gives to the buyer the right to demand the specific fulfillment of the contract by delivery of the basis grade unless there is agreement at the time of tender as to the price of the grade or grades to be tendered. The section reads as follows:

Sec. 6A. That no tax shall be levied under this Act on any contract of sale mentioned in section three hereof if the contract provide that, in case cotton of grade or grades other than the basis grade specified in the contract shall be tendered in performance of the contract, the parties to such contract may agree, at the time of the tender, as to the price of the grade or grades so tendered, and that if they shall not then agree as to such price, then, and in that event, the buyer of said contract shall have the right to demand the specific fulfillment of such contract by the actual delivery of cotton of the basis grade named therein and at the price specified for such basis grade in said contract, and if the contract also comply with all the terms and conditions of section five hereof not inconsistent with this section: Provided, That nothing in this section shall be so construed as to relieve from the tax levied by section three of this Act any contract in which, or in the settlement of or in respect to which, any device or arrangement whatever is resorted to, or any agreement is made, for the determination or adjustment of the price of the grade or grades tendered other than the basis grade specified in the contract by any "fixed difference" system, or by arbitration, or by any other method not provided for by this Act.

Contracts made in compliance with this section shall be known as "Section six A Contracts." The provisions of this section shall be deemed fully incorporated into any such contract if there be written or printed thereon, or on the memorandum evidencing the same, at or prior to the time the same is signed, the phrase "Subject to United States Cotton Futures Act, section six A."

Section ten of this act shall not be construed to apply to any contract of sale made in compliance with section six A hereof.

Section 10 authorizes the purchase and sale of contracts requiring actual delivery of the cotton specified in the contract subject to the following conditions:

Section 10. That no tax shall be levied under this Act on any contract of sale mentioned in section three hereof, if the contract comply with each of the following conditions:

First. Conform to the rules and regulations made pursuant to this Act.

Second. Specify the grade, type, sample, or description of the cotton involved in the contract, the price per pound at which such cotton is contracted to be bought or sold, the date of the purchase or sale, and the time when shipment or delivery of such cotton is to be made.

Third. Provides that cotton of or within the grade or of the type, or according to the sample or description, specified in the contract shall be delivered thereunder, and that no cotton which does not conform to the type, sample, or description or which is not of or within the grade specified in the contract shall be tendered or delivered thereunder.

Fourth. Provided that the delivery of cotton under the contract shall not be effected by means of "set-off" or "ring" settlement, but only by the actual transfer of the specified cotton mentioned in the contract.

The provisions of the first, third, and fourth subdivisions of this section shall be deemed fully incorporated into any such contract if there be written or printed thereon, or on the document or memorandum evidencing the same, at or prior to the time the same is entered into, the words, "Subject to United States Cotton Futures Act, section ten."

This Act shall not be construed to impose a tax on any sale of spot cotton.

This section shall not be construed to apply to any contract of sale made in compliance with section five of this Act.

The contracts and rules of the New York and New Orleans exchanges have been changed in an endeavor to conform to the requirements of the statute.

**Cotton Futures are Basis Contracts.**—Future contracts as sold on the speculative exchanges are not specific contracts obliging the seller to deliver a particular lot of cotton or bin of grain, or even a particular grade of cotton or grain. They are "basis" contracts. The price of cotton futures is based upon "middling" cotton, but the buyer is not obliged to deliver that particular grade. He may deliver numerous other higher or lower grades,

the number of deliverable grades varying on the different exchanges, although those of American exchanges are restricted by the "Cotton Futures Act." According as he delivers higher or lower grades than "middling" cotton certain additions to or deductions from the contract price are made.

**Cotton Grade Differences.**—Such additions or deductions to the contract price of cotton futures are based upon "grade differences" established in accordance with the rules of the cotton exchanges and the provisions of the "Cotton Futures Act." In New Orleans the so-called "commercial-difference" system has prevailed for many years. Before the Cotton Futures Act was in effect an exchange committee established the difference between middling and each of the other deliverable grades daily by establishing the official spot quotations for the New Orleans market. Grade differences in New Orleans were, therefore, based directly upon the current price at which the various grades of spot cotton were selling in that market. In Liverpool the method of establishing grade differences is similar to that which was employed in New Orleans in that they are also based upon the relative commercial values of spot cotton. Instead of having a committee, however, which meets each day to establish official spot quotations, the Liverpool Exchange provides a panel of arbitrators, two members of which fix an appraisal or valuation relative to middling whenever any cotton is tendered on a future contract. The New York Cotton Exchange for many years adhered to the so-called "fixed-difference system," an exchange committee fixing the grade differences but once, twice or three times a year. This method sometimes resulted in the arbitrary fixing of differences and between the sessions of the revision committee the grade differences for delivery on future contracts sometimes were not in harmony with the actual value of the various grades of spot cotton. In 1914 the New York Exchange therefore adopted a plan of monthly revision of grade differences, and instructed its revision committee to take into account as nearly as practicable the quotations which they obtained from the southern spot cotton

markets.<sup>12</sup> The revised plan which was to have become effective in full on December 1, 1914, was adopted largely because of the disturbing effect of the fixed-difference method upon cotton hedging, and because of frequent charges in Congress and elsewhere that the New York market did not fairly reflect the world's price for cotton. Meanwhile, however, the original cotton futures act was enacted and caused the New York Cotton exchange to further revise its methods of establishing grade differences.

Section 6 of the cotton futures act of 1916 requires all American cotton exchanges to establish their contract grade differences in accordance with the following provisions:

Sec. 6. That for the purposes of section five of this act the differences above or below the contract price which the receiver shall pay for cotton of grades above or below the basis grade in the settlement of a contract of sale for the future delivery of cotton shall be determined by the actual commercial differences in value thereof upon the sixth business day prior to the day fixed, in accordance with the sixth subdivision of section five, for the delivery of cotton on the contract, established by the sale of spot cotton in the market where the future transaction involved occurs and is consummated if such market be a bona fide spot market; and in the event there be no bona fide spot market at or in the place in which such future transaction occurs, then, and in that case, the said differences above or below the contract price which the receiver shall pay for cotton above or below the basis grade shall be determined by the average actual commercial differences in value thereof, upon the sixth business day prior to the day fixed in accordance with the sixth subdivision of section five, for the delivery of cotton on the contract, in the spot markets of not less than five places designated for the purpose from time to time by the Secretary of Agriculture, as such values were established by the sales of spot cotton, in such designated five or more markets: *Provided*, That for the purposes of this section such values in the said spot markets be based upon the standards for grades of cotton established by the Secretary of Agriculture: *And Provided further*, That whenever the value of one grade is to be determined from the sale or sales of spot cotton of another grade or grades, such value

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<sup>12</sup> A. R. Marsh, "The New Rules of the New York Cotton Exchange," *Textile Manufacturers' Journal*, May 2, 1914, pp. 79-83.

shall be fixed in accordance with rules and regulations which shall be prescribed for the purpose by the Secretary of Agriculture.

The New York and New Orleans cotton exchanges now settle future contracts in accordance with the particular commercial-difference plan required by law. Grade differences at New York are based upon the "average actual commercial differences in value" prevailing in not less than five spot markets designated by the Secretary of Agriculture. New Orleans, however, has been designated to be a bona fide spot market.

**Grain Futures Are Basis Contracts.**—Future grain contracts are also basis rather than specific contracts, in that they permit the delivery of various grades. The standard Chicago wheat contract permits a tender of the following grades:

No. 1	Dark Hard Spring Wheat	At 1½ cents per bushel
No. 1	Dark Northern Spring Wheat	over contract price
No. 2	Dark Hard Winter Wheat	At ½ cent per bushel
No. 2	Dark Northern Spring Wheat	over contract price
No. 1	Hard Winter Wheat	At contract price
No. 2	Hard Winter Wheat	
No. 1	Yellow Hard Winter Wheat	
No. 2	Yellow Hard Winter Wheat	
No. 1	Red Winter Wheat	
No. 2	Red Winter Wheat	
No. 1	Northern Spring Wheat	
No. 2	Northern Spring Wheat	
No. 3	Dark Hard Winter Wheat	At 5 cents per bushel
No. 3	Hard Winter Wheat	
No. 3	Yellow Hard Winter Wheat	
No. 3	Red Winter Wheat	
No. 3	Dark Northern Spring Wheat	At 8 cents per bushel
No. 3	Northern Spring Wheat	under contract price

Contract grades are similarly established for delivery of corn, oats, rye, barley, and flaxseed futures. Certain grades of grain

are commonly deliverable at the contract prices, and various others at a premium or discount of from  $\frac{1}{2}$  to 8 cents per bushel. There is also a general principle to the effect that "on contracts of grain or flaxseed for future delivery the tender of a higher grade of the same kind of grain or flaxseed than the one contracted for shall be deemed sufficient."

The grades of grain deliverable on futures purchased and sold on other American exchanges vary. In some instances the range of deliverable grades is narrower than on the Chicago Board of Trade.<sup>13</sup>

Neither cotton nor grain futures are specific as to the time of delivery, the seller having the option of delivering on any day of the contract month.

**The Future Trading Act (Grain).**—Future trading on the grain exchanges was subjected to regulation by Congress in an act of August 24, 1921, which was declared unconstitutional by the United States Supreme Court in May, 1922, primarily on the ground that the act was based on the taxing power of Congress. Congress later enacted the Future Trading Act of Sept. 21, 1922, which in substance is the same as the original law but is based on the power of Congress to regulate interstate commerce. The Supreme Court upheld its constitutionality in April, 1923.

The act provides for the regulations of all sales of grain for future delivery in interstate commerce and of the exchanges on which the sales are made. More specifically, it makes it unlawful for any person to deliver for transmission through the mails or in interstate commerce by telegraph, telephone, wireless or other means of communication, any offer to make or execute, or any confirmation of the execution of any price quotation or report of the price of any grain future for delivery on or subject to the rules of any board of trade in the United States; or for any person to make or execute a future contract which may be used for hedging a grain or grain products transaction in interstate commerce, or for determining the

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<sup>13</sup> See Federal Trade Commission, *Report on the Grain Trade*, Vol. V, *Future Trading Operations in Grain* (1920), pp. 191-196.



prices for such transaction, or for delivering grain sold, shipped or received in interstate commerce for the fulfillment of such transactions except under prescribed conditions. The conditions are mainly twofold:

1. Grain futures may be sold where the seller is the owner of the actual physical property covered by contract, or is the grower of it, or when either party to the future contract is the owner or renter of the land on which the grain is grown, or is an association of such owners or growers of the grain or of such owner or renters of land.

2. Grain futures may also be sold where the contract is made by or through a member of a board of trade which has been designated as a "contract market" by the Secretary of Agriculture, and the contract is evidenced by a written record showing the date, the parties to the contract and their addresses, the property covered, its price, and the terms of delivery. Each board of trade member is required to keep such record for a period of three years or for a longer period if so directed by the Secretary of Agriculture, and the record must be open to inspection by any representative of the Department of Agriculture or of the Department of Justice.

In order to be designated as "contract markets" by the Secretary of Agriculture, boards of trade are required to comply with various conditions: (1) They must be located at a terminal market where grain is sold in such volume and under such conditions as to "fairly reflect the general value of the grain and the difference in value between the various grades of grain," and where recognized official weighing and inspection services are maintained. (2) The governing boards of the exchanges are required to provide that the exchange or any of its members will render to the Secretary of Agriculture prescribed reports showing the details and terms of all cash and future transactions entered into on the exchange, and will keep prescribed records of the cash and future transactions. (3) The governing boards of the exchanges must prevent the dissemination by the exchange or any of its members of "false, misleading or inaccurate reports, concerning crop or market information or con-

ditions that effect or tend to effect the price of commodities." (4) It is further required to provide for the prevention of price manipulation or corners by exchange dealers or operators. (5) It must admit to membership and all privileges "any authorized representative of any lawfully formed and conducted coöperative association of producers having adequate financial responsibility," and no exchange rule against rebating commissions may apply to the distribution of earnings among the members of a coöperative association.

The Secretary of Agriculture, Secretary of Commerce and Attorney General constitute a commission with power, subject to review in the courts, to suspend or revoke the designation of an exchange as a "contract market" when it is shown that the exchange is not complying with the prescribed provisions of the act. Provision is also made for depriving any individual of the right to trade on a "contract market" in case he is violating the future trading act, and the Secretary of Agriculture is authorized to investigate the operations of grain exchanges and publish the results of investigations.

**Short Selling.**—An additional feature of future contracts is that the seller may or may not have the cotton, grain or other product in his possession at the time of sale. Persons selling contracts before they have the product on hand are in the language of the trade "selling short"—they are relying on their ability to obtain the required cotton or grain before the maturity of their contracts.

**Manner of Delivery.**—In the primary grain exchanges deliveries on future contracts are commonly made by the tender of negotiable warehouse receipts issued by "regular"<sup>14</sup> warehouses or elevators, only the officially graded grain in such warehouses or elevators being acceptable. Deliveries on cotton futures are made by the tender of negotiable press or warehouse receipts accompanied by official inspection certificates.<sup>15</sup>

The actual warehouse receipts or other evidence of grain or cotton are not, however, passed from hand to hand each time

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<sup>14</sup> See Chap. IV, p. 83.

<sup>15</sup> See Chap. XVI, p. 396.

a contract is sold. To avoid this the seller is permitted to issue a so-called "delivery" or "transferable" notice in which he notifies the buyer that he stands ready to deliver certain receipts in fulfillment of the contract. The receipts are tendered only when a contract is closed out by a delivery of the actual cotton or grain which it represents.

Though future contracts call for the delivery of specified quantities of produce, their settlement does not necessarily result in such delivery. The rules of the Chicago Board of Trade, for example, specify that:

In case it shall appear that the delivery of any outstanding trade or contract between members of the Association may be *offset* by some other corresponding trade or contract, made by the parties with other members of the Association, and the parties to such trade or contract, or their authorized agents, consent to such offset, such trade or contract shall be *deemed to have been settled* and any balance between the current market value of the property covered by such trade or contract, and the several contract prices shall be due and payable immediately by the party from whom such balance may be due to the party entitled to receive the same under his contract.

Thus two contracts which agree in all particulars except price may offset each other and be settled by a payment of the price difference. Contracts may in this way be closed out by direct settlement between the parties concerned, or so-called "rings" may be formed whereby the future transactions of many exchange members may be offset and balances adjusted.

**Legality and Binding Nature of Futures.**—Whether or not actual deliveries of produce are made on all future contracts, such contracts are binding and in every case represent actual grain, cotton or other property.

The seller of such a contract is absolutely liable for the delivery, and if called upon for such delivery by the buyer he can in no way avoid compliance with the terms of his contract except under unusual conditions especially provided for. . . . When the time for making delivery has expired he cannot sell out his contract. This fact and the fact that any buyer, from the first to the last, can if he chooses hold his contract and compel the seller

to deliver actual cotton (grain, etc., as the case may be) when the date of maturity arrives, give trading in futures a character entirely different in principle at least, from that of a mere wager or bet.<sup>16</sup>

Though futures are unfortunately sometimes bought or sold in a spirit of gambling, the contracts nevertheless represent actual farm products. In the absence of prohibitive statutes and of proof that both buyer and seller of a future contract understand it to be a wager upon which no delivery will be made, the legality and binding nature of such a contract is upheld by the courts.<sup>17</sup>

**Bucket Shops.**—Brokerage firms dealing in futures should not be confused with "bucket shops" the transactions of which in no way concern either the spot or future cotton and grain trades. The so-called "purchases" or "sales" which are made in bucket shops are not real purchases or sales but mere wagers or bets upon the future prices of specified commodities. Bucket shops are not only illegal as gambling institutions but are in most states prohibited by specific anti-bucket-shop statutes.

**Options.**—Future contracts should likewise be distinguished from "options" which are privileges entitling the buyer, in return for a consideration or forfeit, either to compel the seller to deliver or to receive a specified amount of produce at a fixed price and within a prescribed time. An option entitling the buyer to deliver a certain amount of produce is known as a "put"; one entitling him to call upon the seller for such produce is a "call"; and an option which entitles the buyer either to deliver or receive is a "straddle." Options differ from future contracts in that they do not require delivery unless the buyer chooses to exercise his privilege to put or call. They serve as a means of limiting losses in produce transactions, but have so frequently been used as mere betting devices that in most states they are prohibited alike by state statutes and exchange regulations.

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<sup>16</sup> Bureau of Corporations, *Cotton Exchanges*, Part I, p. 43.

<sup>17</sup> Irwin v. Williar, 110 U. S. 499, 507; C. Parker, "Governmental Regulation of Speculation," *The Annals of the American Academy of Political and Social Science*, Sept., 1911, p. 150.

### FUNCTIONS OF SPECULATIVE EXCHANGES IN THE SALE OF SPOT PRODUCE

One of the direct functions of the speculative exchanges is that they facilitate and supervise speculation in produce and oblige those who desire to speculate to do so in accordance with prescribed rules and principles of justice and equity. The speculative exchanges, however, perform important functions in the sale of spot or cash grain, cotton or other produce, and it is because of these functions that they are important links in the organization of American commerce.

**1. Speculative Exchanges as Spot Markets.**—The speculative exchanges are not merely markets for dealing in futures but, with few exceptions, are great spot or cash produce markets. This is particularly the case in the grain trade. The greatest grain exchanges of the United States are located in the primary grain centers of the interior and in the seaboard grain markets, and as was previously stated,<sup>18</sup> the bulk of the grain handled at these markets is bought and sold on the exchanges in accordance with exchange regulations. While the Chicago Board of Trade is the greatest speculative grain market in the world it is also the greatest cash grain market, and the Minneapolis, St. Louis, Duluth and Kansas City exchanges are likewise important spot as well as speculative markets. Indeed, on many of the primary and seaboard grain exchanges the sale of spot grain is of greater importance than the sale of futures.

The grain exchanges establish uniformity in customs and usages, promote equitable trade principles, regulate inspection, grading, weighing, elevators, warehouse receipts, and storage charges and commissions, promulgate rules for delivery, and in other ways provide an organized market where cash grain may be bought and sold in an orderly manner. As was previously explained their spot grain regulations depend somewhat upon the extent to which the states undertake to regulate the grain trade.<sup>19</sup>

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<sup>18</sup> See Chap. IV, p. 98.

<sup>19</sup> *Ibid.*, p. 86.

Most of the speculative cotton exchanges, likewise, are important spot markets. The New Orleans Exchange is one of the largest spot cotton markets in the cotton belt, the Liverpool Exchange is the largest in Great Britain, and the Havre Exchange is the largest in France.

While in recent years from 100,000 to 600,000 bales of spot cotton have been annually sold on the New York Cotton Exchange, it is the only great speculative produce exchange in the United States which is not a broad spot market. The annual spot sales which in the early seventies exceeded 500,000 bales or over 15 per cent of the crop at times fell to less than 100,000 bales or about 1 per cent during the nineties.<sup>20</sup> In the crop-year 1910-1911 the spot sales were reported at 404,000 bales and in the following year at 219,000 bales, or 3.3 and 1.4 respectively<sup>21</sup> of the season's crop. The principal reasons for the relative decline of the spot business are that New York is not a convenient cotton-export point, that the rail rates to and from the South to New England have been so readjusted that it is less expensive to ship cotton direct to the mills than to reship it from New York, and that the southern planters and dealers are financially less dependent upon New York bankers than in the past. A portion of the cotton supply of New York, moreover, has consisted of so-called "overs" or surplus grades of cotton for which the southern spot buyers have no immediate outlet, and this has deterred spinners from purchasing spot cotton there. Spinners likewise contend that they have not always been able to buy New York futures with a view to requiring actual delivery of cotton because the contracts permitted the delivery of a wide range of grades including the surplus grades for which the spinning demand is small.<sup>22</sup> The restrictions placed upon the grades deliverable on contracts by the "Cotton Futures Act" may

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<sup>20</sup> U. S. Bureau of Corporations, *Cotton Exchanges*, Part I, pp. 248, 249.

<sup>21</sup> New York Stock Exchange, *Annual Report of Cotton Crop*, (1910-1911 and 1911-1912).

<sup>22</sup> M. T. Copeland, *The Cotton Manufacturing Industry*, p. 186.

probably exert an influence upon the quality and quantity of cotton handled in the New York market in the future.

**2. Speculative Exchanges Provide a Continuous Market.—**

It is largely because of the great exchanges where there is a 'continuous market in which large quantities are readily bought and sold at a moment's notice, that dealers are willing to purchase enormous supplies of grain and cotton during the harvesting seasons. By providing a continuous market, the exchanges and the use of negotiable warehouse receipts give to produce the *quality of mobility*.<sup>23</sup>

The existence of a continuous market also facilitates the *financing of the grain and cotton crops*. Were it not for the ability to hedge and the knowledge that grain and cotton always have a ready market on the exchanges, bankers would be less ready to provide buyers with the necessary loans, and commissionmen and merchants would be more cautious in the making of advances or loans to local buyers and producers. The *ability to hedge*, moreover, is absolutely dependent upon the existence of a continuous market. The presence of a group of speculators facilitates the maintenance of a continuous market, for some of them, with a view to making a future profit, are always willing to accept any quantity offered in the market.

**3. Speculative Exchanges Collect and Disseminate Trade Information.—**The great exchanges act as "clearing houses of information."<sup>24</sup> Not only do the exchanges as such, collect and publish information and post it on bulletins, but the knowledge of their individual members as to crop conditions and movements, weather conditions, changes in transportation charges, federal and state legislation, competition, coöperation and the remaining forces affecting the supply of and demand for farm products,<sup>25</sup> is currently given "expression in the form of purchases and sales at prices which are immediately transmitted by

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<sup>23</sup> S. S. Huebner, "The Functions of Produce Exchanges," *The Annals of the American Academy of Political and Social Science*, Sept., 1911, p. 11.

<sup>24</sup> *Ibid.*, p. 16.

<sup>25</sup> See Chap. XVII, p. 416.

wire to all the trade centers, and soon made available to the general public by the daily press."<sup>26</sup>

**4. Speculative Exchanges Tend to Establish World Prices.—**

By providing a continuous market, disseminating trade information, and providing an organized market where future conditions may be systematically discounted, the speculative exchanges do much to establish world prices for cotton and the leading cereals. It is on these exchanges that large number of buyers and sellers regularly register their knowledge of the present and their judgment of the future each time they buy or sell. The telegraph and ticker service has so connected the various grain exchanges that they are practically a single vast market. Allowing for differences in transportation and shipping costs and in some cases import tariffs, the grain prices paid at most of the great exchange markets throughout the world are in the long run substantially uniform because the many arbitrageurs who buy and sell at any of the exchange markets with a view to making a profit out of temporary price differences cause the various exchanges to seek a common level.<sup>27</sup> Wide differences occur only temporarily. In the same way there is normally a world's market and price for cotton.

The prices paid in the exchange markets affect not only the exchange transactions, but as previously stated the prices received by the growers of cotton and grain, and those paid by millers, malsters, cereal manufacturers, spinners and weavers are usually based directly upon the current price quotations of the primary market in which the grain is bought or sold or of the cotton exchange in which the cotton is hedged.

**5. Future Contracts as a Means of Insuring Trade Profits.—**

It is not only by furnishing a continuous market where grain or cotton may be bought or sold at any time that the exchanges afford protection to producers, dealers, bankers and manufacturers. The future contracts which are bought and sold on the exchange serve as a means of insuring against the

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<sup>26</sup> S. S. Huebner, "The Functions of Produce Exchanges," *The Annals of the American Academy of Political and Social Science*, Sept., 1911, p. 16.

<sup>27</sup> See Chap. IV, p. 65.



loss of trade profits resulting from fluctuations in the prices of spot produce.

The most *direct use of futures* for this purpose occurs when producers, dealers, merchants, exporters or other sellers of grain or cotton sell contracts with a view to actually delivering the grain or cotton at the agreed price, and when millers, spinners or other buyers of produce purchase futures for the purpose of requiring such deliveries during given months throughout the year. Grain futures are, however, not generally used in this way and cotton futures seldom, because they are not specific as to the grade which will be delivered or the day of the month when deliveries will be made.

Futures are more commonly used as a means of *hedging spot transactions*. Any dealer or shipper with grain or cotton on hand for which no immediate orders are received may hedge by selling future contracts on the speculative exchanges. Perhaps the simplest illustration is that of a primary market grain dealer who has a quantity of grain in store which he eventually hopes to ship to the seaboard and by so doing make a small trade profit. Assuming that in August a Chicago dealer has bought 100,000 bushels of wheat for 90 cents a bushel, it is obviously important in the absence of insurance, that prices should not decline before he finds his eastern buyer. In order to protect himself against this possibility he may immediately sell a future contract on the exchange for delivery in some future month, say in September. He now is party to two distinct transactions—a spot and a future transaction—for it is not his intention to deliver his grain on the future contract which he has sold. If by the time he finds his eastern buyer, the price of wheat in Chicago has declined to 80 cents it is obvious that he has lost 10 cents per bushel on the grain which he has in store. In that event, however, the price of futures will also have declined 10 cents, for spot and future grain prices normally fluctuate together, and he is therefore able to close out or cover his short sale by buying a future at a profit of 10 cents a bushel. The loss on his spot grain and the profit on his future transaction, therefore, counterbalance each other and on the basis of

Chicago prices he has neither a loss nor a profit. Spot prices in the seaboard markets, however, are normally higher than those at Chicago or other primary markets by an amount sufficient to cover shipping and handling costs and yield a trade profit. When the price of his grain in Chicago has declined to 80 cents, he will therefore be able to sell in New York at a price which will enable him to pay shipping and handling costs and make the small trade profit which he originally desired. Had the price of grain risen instead of declined his hedge would have deprived him of a speculative gain, but would have similarly insured his trade profit.

In the same way country grain dealers, line elevator companies, seaboard grain dealers, grain exporters, local cotton merchants, cotton exporters and brokers or other grain and cotton dealers in many cases hedge grain or cotton which they have bought so as to insure their trade profits. Hedging is sometimes more complicated than the simple illustration here given; for cotton, for example, may be bought in the interior of the South, hedged on the New York or New Orleans exchanges, and ultimately sold in Liverpool or New England, but the principle is the same.

Grain and cotton dealers of all kinds may also hedge grain or cotton which they have privately contracted to deliver at a fixed price, but which they do not at the time possess. Thus it may be assumed that in August a Chicago grain dealer, privately contracts to deliver to a New York miller in September 100,000 bushels of a particular grade of wheat at \$1.14 a bushel, but that he does not possess this wheat at the time he accepts the contract. He agrees to deliver at \$1.14 because that price will enable him to make a trade profit and because it bears the correct relation to the price at which he can buy September futures. He therefore immediately buys a September future for the same quantity of wheat at say \$1.00 per bushel. Assuming that the price of wheat rises and that he buys the 100,000 bushels of cash wheat in Chicago for \$1.16, it is obvious that he has lost 2 cents as a result of the fluctuation in the price of spot wheat. The future which he bought would normally, however,

also have risen to \$1.16, and he could sell it at a profit of 16 cents per bushel. He would now be able to deliver the 100,000 bushels profitably at \$1.14 a bushel, because the 14 cents net difference between his loss on the spot transaction and profit on the future transaction is adequate to cover shipping and handling costs and yield a small trade profit.<sup>28</sup>

Spinners or millers who have bought a supply of cotton or grain without having contracted to sell their yarn or flour may similarly hedge by selling a corresponding quantity of future contracts. If they have contracted to deliver certain quantities of yarn or flour before buying the required amount of cotton or grain they may hedge by purchasing future contracts. Textile manufacturers, millers, wholesale merchants or others who have on hand a large stock of unsold finished cotton or grain products may if they desire hedge by selling cotton or grain futures in proportion to the amount of cotton or grain required to make a given quantity of the finished products. They may in this way avoid loss on their stock of goods to some extent because the prices of the finished products are in a large measure based upon the price of the raw materials.<sup>29</sup> Since this price relation is not at all times definite and exact the hedging system is less commonly used than in the purchase and sale of raw cotton and grain.

The amount of grain and cotton hedging on the part of millers and spinners varies in different places. Large flour millers in the United States regularly hedge their grain and flour transactions. American cotton spinners hedge less frequently; the practice is still less common among Continental European spinners who carry somewhat smaller stocks of raw cotton and are further removed from the large speculative exchanges; and there is relatively little hedging on the part of British spinners who usually require the cotton merchants to hold all but a small part of the raw cotton supply. The greatest amount

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<sup>28</sup> \$1.14 = \$1.00 in Chicago plus say 14 cents to cover shipping and handling costs and a trade profit.

<sup>29</sup> See Report of Committee of American Cotton Manufacturers' Association on Cotton Exchanges, *Textile Manufacturers' Journal*, May 2, 1914, p. 87.

of hedging is done by the merchants, dealers, exporters and other grain and cotton middlemen who stand between the farmers and the manufacturers, and who desire to make a trade profit by distributing the crops.

The aggregate volume of hedging transactions is enormous, for a given quantity of grain and cotton may be variously hedged by the local buyer, central dealer, exporter, manufacturer and any other grain and cotton concerns. It may also be hedged repeatedly by a single owner, for hedges may be shifted from month to month until the spot grain or cotton is eventually disposed of. Hedging is the principal trade function of the speculative exchanges. Strangely enough it enables those grain and cotton concerns that wish to avoid the danger of speculation to protect their trade profits by entering the speculative market.

Hedging does not always afford complete insurance of trade profits, for prices of spot produce and futures do not always fluctuate in exact relation to each other. In the cotton trade the relation between spot and future prices has at various times broken down. Owing to the seller's right to deliver numerous grades of cotton including low grades, cotton futures have normally sold at a discount. The merchant or spinner can make due allowance for this normal discount, but when at times, especially in New York, cotton futures have sold abnormally low because of inaccurate grade differences or other reasons, the hedge has not afforded complete protection. The exactness of hedging may also at times be destroyed by undue manipulation or the cornering of futures maturing in particular months. In the grain trade it has usually been less difficult to obtain substantially exact hedges, but some difficulty has been experienced from time to time.

#### EFFECT OF SPECULATION ON SPOT PRICES

There are widely varying views as to the effect of speculation upon the price of spot produce. Cotton and grain growers not infrequently contend that it depresses the prices which

they receive. This view is based mainly on the belief that as spot and future prices largely fluctuate in harmony, the sale of futures has the same effect as a large increase in the supply of grain or cotton. The sale of futures, whether as a short sale or otherwise, does not, however, have such a depressing effect. In the first place every short sale means also a purchase at the time and "consequently against the depressing influence of the short sale there is the uplifting influence of the purchase, and the effect of the transaction on prices is determined by the relative character of the buying and selling and not by the mere fact that a sale has been made."<sup>30</sup> Second, every future is a valid and binding contract. Every short sale, therefore, before or at the time when the contract matures, requires a purchase either of grain or cotton or of another future to offset the one that was sold. Third, "this popular misconception of short selling overlooks the extremely important fact that influential speculators seldom undertake deliberately to contest natural conditions at least for any length of time. Instead they frequently spend large sums of money in securing all possible information which may tend to influence prices. Instead of fighting natural conditions, the ordinary speculator is eager to ascertain correctly what the natural conditions are and what their probable influence will be, and then to shape his campaign in the market in accord with such information."<sup>31</sup> Fourth, as was pointed out in a previous chapter, when futures sell at an abnormal discount, as they sometimes do in the cotton trade, the spot prices of the large markets refuse to follow the price of futures and cotton buyers are economically compelled to readjust the limits which determine the growers' prices.<sup>32</sup> Fifth, statistics as well as common trade knowledge indicate that in the years when the volume of future sales is greatest spot prices are usually higher than when speculation is at low ebb.<sup>33</sup>

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<sup>30</sup> U. S. Bureau of Corporations, *Cotton Exchanges*, Part IV, p. 276.

<sup>31</sup> *Ibid.*

<sup>32</sup> Chap. VI, p. 147.

<sup>33</sup> For cotton price statistics see Bureau of Corporations, *Cotton Exchanges*, Part IV, pp. 272-275. For grain price statistics see U. S. *Industrial Commission Report*, Vol. VI. pp. 192-195.

Sixth, the present effect of speculation upon farmers' prices is not to be judged by comparison with assumed prices such as might be paid if all the abuses of speculation were abolished and all its advantages were retained, but by comparison with the prices which would probably be paid if there were no speculation whatever. The widespread use of the future markets for hedging purposes makes it clear that if the selling of futures were everywhere abolished, grain and cotton buyers would endeavor to protect their trade profits by paying the farmers relatively lower prices.

While there are farmers who believe that speculation depresses spot prices, so there are flour millers and cotton spinners who are equally positive that it has the opposite effect. They usually have in mind the "corners" which sometimes occur in the speculative markets. A *speculative corner* occurs when the outstanding futures maturing in a particular month are bought up by a group of operators who suddenly threaten to require delivery. It is only a temporary "squeeze" which lasts until the operators who sold short for delivery in that month settle at a much advanced price. It is an evil mainly because of its disturbing effect upon outstanding hedges. The speculative corner should not be confused with an actual corner of spot grain or cotton. Such a corner would have far-reaching effects, but the grain and cotton crops of the United States and of the world have become so vast there is little likelihood of such a calamity.

While the sale of futures usually tends to maintain growers' prices because of their use for hedging purposes, it does not follow that the spot prices paid by flour millers and cotton spinners are thereby advanced beyond the level warranted by natural conditions of supply and demand. As stated by the United States Bureau of Corporations in connection with cotton prices, "regardless of just how the benefit is divided as between producers and spinner, it is certain that the hedging function, under a properly conducted system, tends, within narrow limits, to increase the price of cotton to the producer without advancing the price to the spinner."<sup>34</sup>

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<sup>34</sup> *Cotton Exchanges*, Part IV, p. 284.

Speculation affects central market prices in that it tends to establish a proper price level earlier than it would otherwise be established. It moreover tends to steady spot prices. This steadying effect is not to be confused with the fact that future prices have in recent years fluctuated more violently and more frequently than spot prices. Spot prices are steadied by speculation in that without the tendency of the exchanges to constantly discount future conditions and their unusual efforts to obtain accurate trade information, they would break much more sharply between the harvesting seasons. The speculative exchanges likewise, as was previously pointed out, tend to equalize the movement of prices somewhat throughout a given crop-year and to facilitate the establishment and maintenance of a world's price for cotton and the leading cereals.

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## CHAPTER IX

### THE LOCAL MARKET FOR LIVE STOCK

The live-stock trade of the United States has reference largely, to the trade in beef cattle, hogs and sheep. Dairy cattle are the basis of the country's highly important dairy industries, and the value of horses, etc., for draft purposes is unquestioned; but neither in dairy cattle as such nor in horses is there the systematically conducted trade that is carried on in meat-producing animals.

The trade in beef cattle, hogs and sheep will serve to illustrate an agricultural industry in which there is no systematic exchange speculation, in which the growers instead of selling locally ship much of their output direct to large central markets, and in which the central or primary markets serve somewhat different purposes than those of the grain and cotton trades.

### GEOGRAPHICAL CLASSIFICATION OF LIVE-STOCK TRADE

**The Cattle-growing Districts.**—The United States Department of Agriculture estimates that prior to the high prices and special demand occasioned by the war, the total number of cattle, other than dairy cows, on the farms of the United States declined from a maximum of over 51,500,000 on January 1, 1907, to 35,855,000 on January 1, 1914, and 37,067,000 on January 1, 1915. The returns of the Census Office differ from these, but likewise show a decline from 50,584,000 on June 1, 1900, to 41,178,000 on April 15, 1910. There were in addition some 21,000,000 dairy cows. The total number of cattle varies considerably at different times of the year, the number on July first being about 14 per cent larger than on February first,<sup>1</sup> and this

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<sup>1</sup> U. S. Bureau of Statistics (Department of Agriculture), *The Agricultural Outlook*, April 23, 1914, p. 9.

variation explains a part of the difference between the census returns and those of the Department of Agriculture. It also shows that the decline in the number of cattle during the decade 1900 to 1910, as reported by the Census Office, is somewhat exaggerated because their number is normally about 4 per cent larger in the United States on June first than on April fifteenth.

During the war the number of beef cattle on the farms increased to 44,112,000 on Jan. 1, 1918. It reached a post-war maximum of 45,088,000 on Jan. 1, 1919 and then declined to slightly less than 42,000,000. The number reported by the Department of Agriculture for Jan. 1, 1923 was 41,923,000.

The largest numbers of beef cattle are raised in Texas, Iowa, Nebraska, Kansas, Missouri, Illinois, South Dakota, California, Oklahoma, Colorado, Minnesota, Montana and Arizona. Although cattle are raised throughout the entire country, the great beef-producing states are those of the Mississippi Valley and the Far West. They may be divided into three main areas: (1) the northwestern grazing grounds, or northern half of the Great Plains including the eastern foothills and many of the plateaus and valleys of the Rocky Mountains. In this area, comprising large parts of North and South Dakota, Minnesota, western Nebraska, Colorado, Montana and Wyoming, the so-called "western" grass-fed cattle are grown. (2) The southwestern grazing grounds, comprising parts of Texas, Oklahoma, Arkansas, New Mexico and Arizona. The cattle raised in this area are commonly known as "Texas range" cattle. (3) The feeding grounds, include parts of Iowa, Kansas, eastern Nebraska, Missouri and Illinois. The number of beef cattle in this area exceeds that in any other cattle-growing district, for not only do the growers raise much native stock, but large numbers of Western and Texas range cattle are shipped to the feeding grounds to be fattened on corn and to a smaller extent on cottonseed meal and the coarse grains. Some of the stock feeders are corn growers who prefer to market their crop in this way, while others are professional feeders who make a business of buying the grass-fed cattle and the necessary food and of selling the fattened

animals at prices sufficiently high to cover all costs and yield a profit.

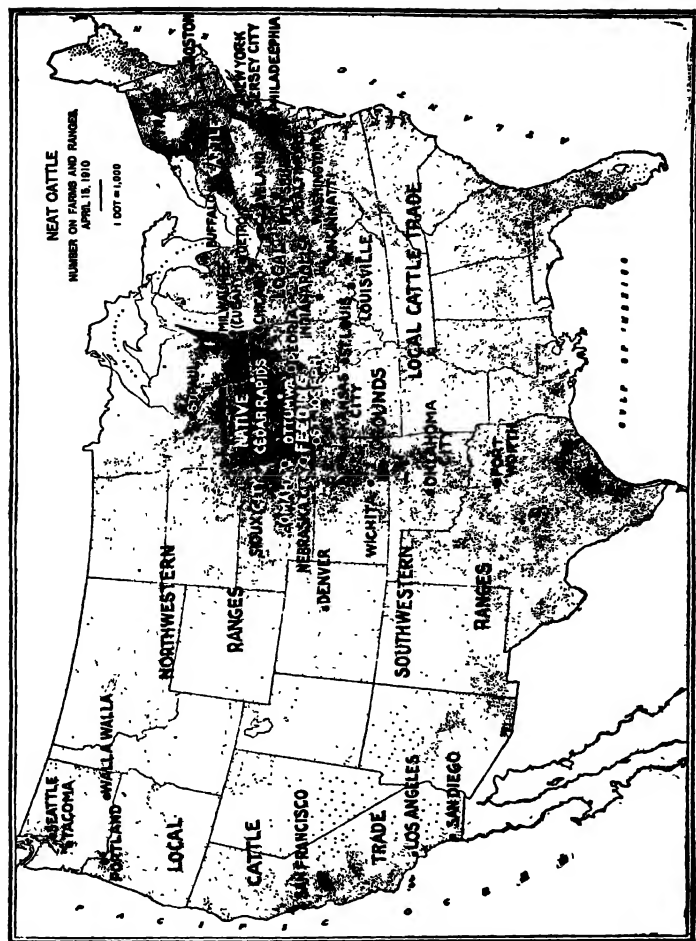
As shown in Map No. XII many beef cattle are grown in the Pacific slope, in the North Atlantic states and throughout the South, but the cattle trade in these regions is mainly a local trade. The populous regions of most of the eastern and southern states are compelled to draw upon the three principal cattle-raising areas for much of their beef supply. The extent of beef cattle production in the census year 1920 is shown in Map No. XIII.

**The Hog-raising Area.**—The number of hogs in the United States according to census returns also declined from 62,868,000 on June 1, 1900, to 58,186,000 on April 15, 1910, a loss which is counterbalanced by the fact that the number is normally about 18 per cent larger on June first than on April fifteenth. The Department of Agriculture estimates that the number of hogs on the farms of the United States on January 1, 1901, was 56,982,000, on January 1, 1914, 58,933,000, and on January 1, 1915, 64,618,000. Under war and post-war conditions the number advanced to a maximum of 74,584,000 on January 1, 1919 and then declined to 56,095,000 on January 1, 1921. The number reported by the Department of Agriculture for January 1, 1923, was 63,424,000. Iowa, Illinois, Missouri, Nebraska, Indiana, Ohio, Kansas, Minnesota, Texas, South Dakota and Georgia are now the greatest hog-growing states of the country. Many are raised in the South and in the vicinity of the large North Atlantic cities, but the hog-growing area is largely confined to the corn belt. The country's corn crop is used mainly to feed hogs, cattle, sheep and other live stock, and the feeding is done largely within or adjacent to the corn belt.<sup>2</sup> (See Map XIV.)

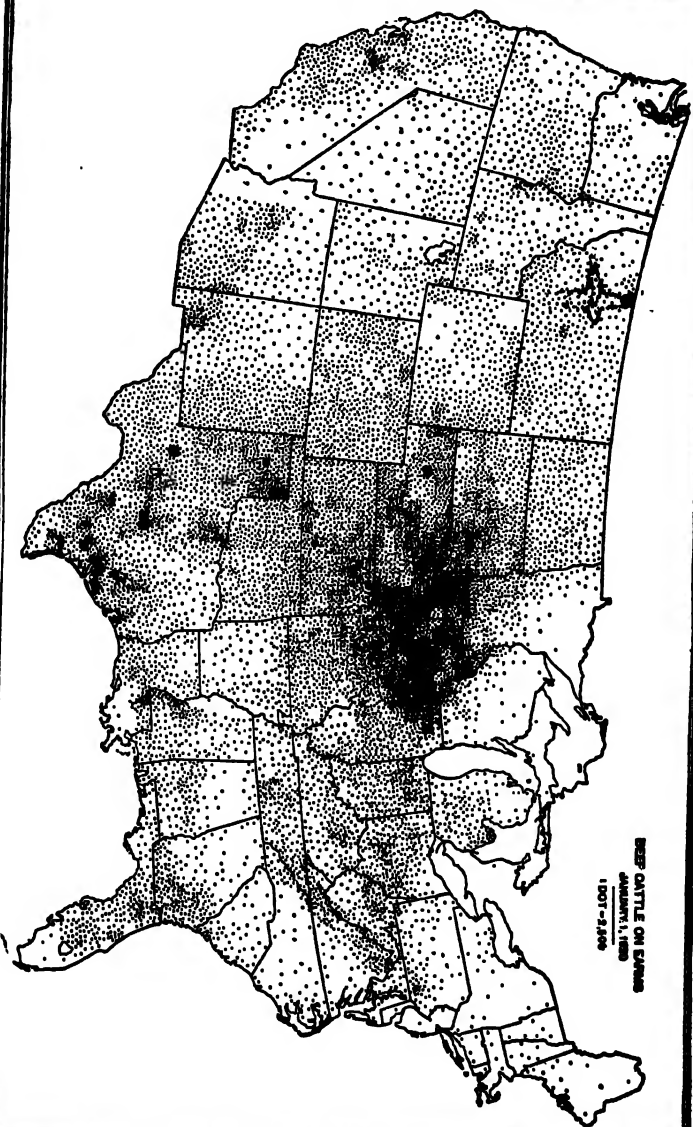
**The Sheep-growing Districts.**—The flocks from which the country obtains its supply of mutton and lamb are raised mainly in four districts: (1) The northwestern Rocky Mountain foothills and northern and central mountain states, are particularly important as the mutton-producing part of the western sheep

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<sup>2</sup> See map No. V, p. 41.

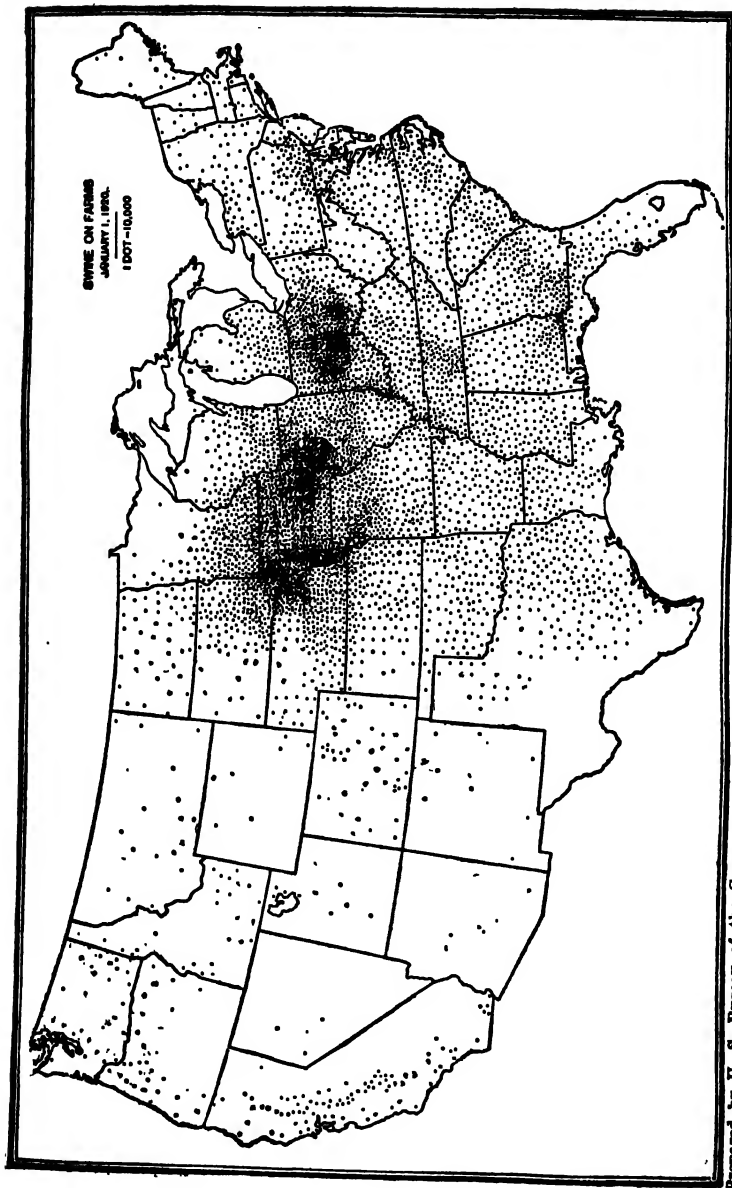


MAP XII.—BEEF CATTLE DISTRICTS AND CENTRAL LIVESTOCK MARKETS.  
Dots showing number as in Thirteenth Census of U. S.



Prepared by U. S. Bureau of the Census.

MAP XIII.—BEEF CATTLE PRODUCTION, JAN. 1, 1920.



Prepared by U. S. Bureau of the Census.

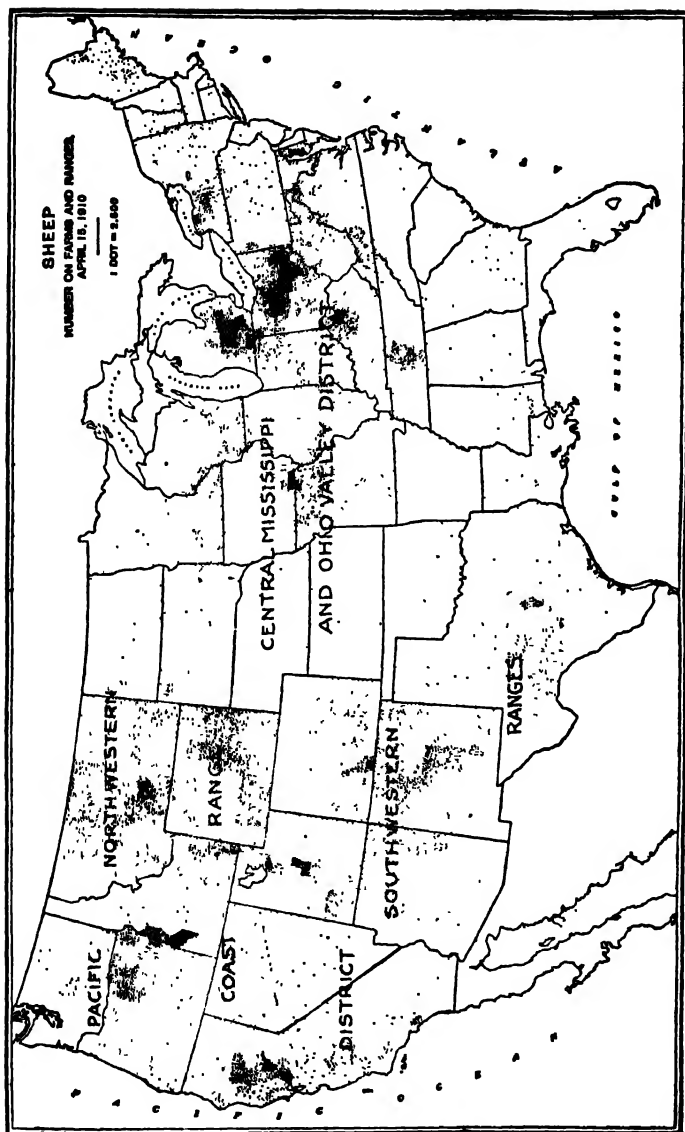
MAP XIV.—PRODUCTION OF HOGS IN U. S., JAN. 1, 1920.

ranges. Idaho, Colorado, Wyoming, Montana, Utah and Nevada are now among the greatest sheep growers in the United States. (2) The southwestern Rocky Mountain foothills and plains, including Texas, New Mexico and Arizona. (3) The Pacific Coast states,—chiefly Oregon, California, and western Idaho, and (4) the central Mississippi and Ohio River valleys, including Ohio, Michigan, Missouri, Iowa, South Dakota, Kentucky, Nebraska, Indiana and Illinois. (See Map No. XV)

Sheep production did not respond to the high prices occasioned by the war to the extent that other branches of the live-stock industry did. The number of sheep on the farms of the United States was reported by the Department of Agriculture as 48,603,000 on Jan. 1, 1918 and slightly more a year later. It then declined to 36,048,000 on Jan. 1, 1922 and 37,209,000 on Jan. 1, 1923.

The entire sheep flock of the United States as reported by the Census Office comprised 55,363,000 on April 15, 1910, as compared with 63,374,000 on June 1, 1900. Since there is a normal variation of about 20 per cent between April fifteenth and June first, it is seen that the number during the decade remained about stationary. From January 1, 1911, to January 1, 1915, however, the estimates of the Department of Agriculture show a decline from 53,633,000 to 49,956,000. Between February first and June first of each year there is a seasonal variation of nearly 41 per cent in the total number of sheep on the farms of the United States.

Nearly 65 per cent of all the sheep in the United States are raised in the first three districts. It is here that the operation of large sheep ranges and ranches constitutes one of the main industries. The majority of the sheep are grazed in large flocks on open Government ranges, on national forest lands, on privately leased lands or on lands which the individual sheep growers or sheep corporations have purchased. Some sheep are raised on inclosed or fenced-in ranges and ranches but they are more commonly handled under the herding system. During the summer they are in many cases driven or shipped to the mountain ranges to graze on native grasses and forage plants



MAP XV.—SHEEP-GROWING DISTRICTS.  
 Dots showing number as in Thirteenth Census of U. S.



better adapted to sheep than to cattle grazing, and in the winter months those which have not been sold are moved to lower and more sheltered ranges where grazing and feeding maintains them until spring.

A portion of the sheep found in the central West are western range-born sheep and lambs, which as in the case of western cattle are taken there to be fed for the market.<sup>3</sup> The practice is less common than in the cattle industry, but there are numerous corn growers and feeders who make a business of purchasing western as well as native lambs to feed and eventually sell, at a profit.

**General Magnitude of Live-stock Industries.**—The magnitude of the meat-producing live-stock industries of the United States is seen in that the estimated farm value of the country's cattle (other than dairy cows) on January 1, 1923, was \$1,076,254,000, of hogs, \$726,699,000, and of sheep, \$278,939,000. During the period of inflated war prices, these figures were more than doubled. The hog-raising industry of the United States exceeds that of any other country in the world except China; the number of cattle is exceeded only in British India; and the number of sheep only in Australia and Argentine Republic.

**Volume of Annual Live-stock Trade.**—While the number and value of the food animals in the United States indicate the source of the country's meat supply, only a portion of them are annually sold in the market or slaughtered. The returns of the Census Office show that the per cent of total slaughter to total stock on hand on January 1, 1909, in the case of hogs was about 81.2 per cent, cattle 30.8 per cent, cattle other than dairy cows 41 per cent and sheep 28.1 per cent. They indicate that in 1909 the total output of stock including home consumption and exports comprised 20,368,000 cattle, 52,015,000 hogs, and 14,620,000 sheep. If the number slaughtered on the farms is deducted, it is seen that 17,828,000 cattle (including calves), 36,636,000 hogs and 14,091,000 sheep reached the live-stock

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<sup>3</sup> U. S. Tariff Board, *Wool and Manufacturers of Wool*, Vol. I, p. 550.

markets of the United States for slaughtering and exporting purposes.<sup>4</sup> A portion of those slaughtered on the farms, moreover, are sold by the stock growers in local meat markets. The total cattle sold by growers for all purposes in 1909 was reported as 27,315,000; and in the same year 37,500,000 hogs and 18,991,000 sheep were sold.

#### SHIPPING FROM LOCAL POINTS TO CENTRAL MARKETS

In contrast with the growers of grain and cotton who usually, though not always, sell their crops locally, the stock growers in the principal live-stock districts throughout the central and far-western states usually ship their beef cattle, hogs and sheep to the large central live-stock markets. The animals of western ranches and ranges are driven to local shipping points, loaded into live-stock cars and shipped in carload lots to the central stockyards at Chicago, St. Paul, Kansas City, St. Louis, Omaha, St. Joseph, Sioux City and other slaughtering and packing centers.

**Railroad Equipment.**—Live stock is shipped to the central markets in especially constructed stock cars, equipped with stalls or pens, watering troughs and feeding appliances. Hogs and sheep are frequently shipped in double-decked cars. The cars are mainly owned by the carriers, but some are owned by private stock-car companies who lease most of them to the railroads upon receipt of a mileage charge of one cent per mile.<sup>5</sup> The private cars, sometimes known as "palace stock-cars," are shipped from one section of the West to another, and tend to supplement the cars provided by the carriers. Some of them are rented to stock owners upon receipt of fixed rentals, but it is mainly the owner of exhibition live stock, race horses, etc., who uses the private cars in this way. The shipper's freight charges are the same whether his stock is shipped to market in private or railroad-owned cars. The carriers frequently make up live-stock

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<sup>4</sup> See Thirteenth U. S. Census (1910), Vol. X, pp. 343-345; U. S. Bureau of Animal Industry. Annual Report (1914), pp. 253-260.

<sup>5</sup> American Railway Association Tariff Bureau, *Freight Tariff* No. 7B, Effective July 1, 1922.

trains which are given complete right of way over other freight trains and are moved at a speed approaching that of passenger trains.

The railroads are also equipped with stockyards at various points along their lines, where the live stock may be unloaded for rest, food and water. They are required by law to unload the live stock at the end of a specified number of hours.

**Live-stock Contract.**—Live stock is not shipped on the usual bills of lading such as used for grain, cotton, or other farm crops, but on the so-called "uniform live-stock contract" which was prescribed by the Interstate Commerce Commission and became effective March 15, 1922. When shipping cattle, hogs, sheep and other animals "except such as are chiefly valuable for feeding, racing, show purposes or other special purpose" the shipper is required to certify that the shipment constituted "ordinary live stock." He is not required to declare their value, for the rates on such live stock are not dependent on the valuation placed by the shipper on "ordinary live stock."<sup>6</sup> Shipments of farm animals "other than ordinary live stock" on the contrary require declaration of the value of each animal.

The contract terms and conditions laid down on the uniform live-stock contract are as follows:

Sec 1. (a) Except in the case of its negligence proximately contributing thereto, no carrier or party in possession of all or any of the live stock herein described shall be liable for any loss thereof or damage thereto or delay caused by the act of God, the public enemy, quarantine, the authority of law, the inherent vice, weakness, or natural propensity of the animal, or the act or default of the shipper or owner, or the agent of either, or by riots, strikes, stoppage of labor or threatened violence.

(b) Unless caused by the negligence of the carrier or its employees, no carrier shall be liable for or on account of any injury or death, sustained by said live stock occasioned by any of the following causes: Over-loading, crowding one upon another, escaping from cars, pens, or vessels, kicking or goring or otherwise injuring themselves or each other, suffocation, fright, or fire caused by the shipper or the shipper's agent, heat or cold changes in

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<sup>6</sup> Federal act of June 3, 1915, as amended to date.

weather or delay caused by stress of weather or damage to or obstruction of track or other causes beyond the carrier's control.

(c) In case of quarantine, the live stock may be discharged at risk and expense of owners into quarantine depot or elsewhere, as required by quarantine regulations or authorities, or for the carrier's dispatch, or at nearest available point in carrier's judgment, and in any such case carrier's responsibility shall cease when the property is so discharged, or the property may be returned by carriers at owner's expense to shipping point earning freight both ways. Quarantine expenses of whatever nature or kind upon or in respect to the property shall be borne by the owners of the property or be a lien thereon. In case a shipment is stopped in transit by quarantine, the carrier shall immediately give notice of such fact to the shipper or consignee. Except in the case of its negligence proximately contributing thereto, no carrier shall be liable for loss or damage occasioned by fumigation of disinfection or other acts required or done under quarantine regulations or authorities, nor for detention, loss, or damage of any kind occasioned by quarantine laws or in the enforcement thereof; and the shipper shall hold the carrier harmless for any expense it may incur or damages it may be required to pay by reason thereof.

Sec. 2. (a) No carrier is bound to transport live stock by any particular train or vessel or in time for any particular market, or otherwise than with reasonable dispatch. Every carrier shall have the right in case of physical necessity to forward said live stock by any carrier or route between the point of shipment and the point of destination.

(b) In all cases not prohibited by law, where a lower value than actual value has been represented in writing by the shipper or has been agreed upon in writing as the released value of the live stock as determined by the classification or tariffs upon which the rate is based, such lower value, plus freight charges, if paid, shall be the maximum amount to be recovered whether or not such loss or damage occurs from negligence.

(c) Claims for loss, damage, or injury to live stock must be made in writing to the originating or delivering carrier or carriers issuing this bill of lading within six months after delivery of the live stock (or in case of export traffic within nine months after delivery at port of export) or, in case of failure to make delivery, then within six months (or nine months in case of export traffic) after a reasonable time for delivery has elapsed; provided, that if such loss, damage or injury was due to delay or damage while being loaded or unloaded, or damaged in transit by carelessness

or negligence, then no notice of claim nor filing of claim shall be required as a condition precedent to recovery. Suits for loss, damage, injury or delay shall be instituted only within two years and one day after delivery of the live stock, or in case of failure to make delivery, then within two years and one day after a reasonable time for delivery has elapsed: *Provided*, that in case the claim on which suit is based was made in writing within six months, or nine months in case of export traffic (whether or not filing of such claim is required as a condition precedent to recovery) suit shall be instituted not later than two years and one day after notice in writing is given by the carrier to the claimant that the carrier has disallowed the claim or any part or parts thereof specified in the notice.

Sec. 3. The owner or consignee shall pay the freight and average, if any, and all other lawful charges accruing on said property; but, except in those instances where it may lawfully be authorized to do so, no carrier by railroad shall deliver or relinquish possession at destination of the property covered by this live-stock contract until all tariff rates and charges thereon have been paid. The consignor shall be liable for the freight and all other lawful charges, except that if the consignor stipulates by signature in the space provided for that purpose on the face of this contract that the carrier shall not make delivery without requiring payment of such charges, and the carrier, contrary to such stipulation, shall make delivery without requiring such payment, the consignor shall not be liable for such charges. Nothing herein shall limit the right of the carrier to require at the time of shipment the payment or guarantee of charges.

Sec. 4. (a) The shipper at his own risk and expense shall load and unload the live stock into and out of cars, except in those instances where this duty is made obligatory upon the carrier by statute or is assumed by a lawful tariff provision. In case any person shall accompany the live stock in charge of same, he shall take care of, feed and water the live stock while being transported, whether delayed in transit or otherwise, and whenever such person shall open or close any door or opening in the car or cars, or the pens or compartments in the vessel, he shall see that the same are so closed and fastened as to prevent the escape therefrom of any of the live stock.

(b) When bedding or appliances of a character not generally in use in the transportation of live stock are required they shall be furnished by the shipper at his own expense and he shall separate different kinds of stock when loaded in the same car by

adequately strong partitions and such stock shall be at the risk of the shipper as to any damage resulting from the insufficiency or inadequacy of any such bedding, appliance, or partition.

(c) Before the live stock is removed from the possession of the carrier or mingled with other live stock the shipper, owner, consignee or agent thereof shall inform in writing the delivering carrier of any visible or manifest injury to the live stock.

Sec. 5. (a) If all or any part of said live stock is carried by water over any part of said route, such water carriage shall be performed subject to all the terms and provisions of and all the exemptions from liability contained in the Act of Congress of the United States, approved on February 13, 1893, and entitled "An act relating to the navigation of vessels, etc.," and of other statutes of the United States according carriers by water the protection of limited liability, and to the conditions contained in this bill of lading not inconsistent therewith or with this section.

(b) No such carrier by water shall be liable for any loss or damage resulting from any fire happening to or on board the vessel, or from explosion, bursting of boilers or breakage of shafts, unless caused by the design or neglect of such carrier.

(c) If the owner shall have exercised due diligence in making the vessel in all respects seaworthy and properly manned, equipped, and supplied, no such carrier shall be liable for any loss or damage resulting from the perils of the lakes, seas, or other waters, or from latent defects in hull, machinery, or appurtenances, whether existing prior to, at the time of, or after sailing, or from collision, stranding, or other accidents of navigation, or from prolongation of the voyage. And, when for any reason it is necessary, any vessel carrying any or all of the live stock herein described shall be at liberty to call at any port or ports, in or out of the customary route to tow and be towed, to transfer, transship, or lighter, to load and discharge goods at any time, and assist vessels in distress, to deviate for the purpose of saving life or property, and for docking and repairs. Except in case of negligence, such carrier shall not be responsible for any loss or damage to live stock if it be necessary or is usual to carry the same upon deck.

(d) General average shall be payable according to York-Antwerp Rules, 1890, and, as to any matter not therein provided for, according to the law and usage of the port of New York. If the owners shall have exercised due diligence to make the vessel in all respects seaworthy and properly manned, equipped and supplied, it is hereby agreed that in case of danger, damage or disaster resulting from faults or errors in navigation, or in the

management of the vessel or from any latent or other defects in the vessel, her machinery or appurtenances, or from unseaworthiness, whether existing at the time of shipment or at the beginning of the voyage (provided the latent or other defects or the unseaworthiness was not discoverable by the exercise of due diligence), the shippers, consignees and/or owners of the cargo shall nevertheless pay salvage and any special charges incurred in respect of the cargo, and shall contribute with the shipowner in general average to the payment of any sacrifices, losses or expenses of a general average nature that may be made or incurred for the common benefit or to relieve the adventure from any common peril.

(e) If the live stock is being carried under a tariff which provides that any carrier or carriers party thereto shall be liable for loss from perils of the sea, then as to such carrier or carriers the provisions of this section shall be modified in accordance with the tariff provisions, which shall be regarded as incorporated into the conditions of this uniform live-stock contract.

(f) The term "water carriage" in this section shall not be construed as including lighterage in or across rivers, harbors, or lakes, when performed by or on behalf of rail carriers.

Sec. 6. Any alteration, addition, or erasure in this contract which shall be made without an indorsement thereof hereon, signed by the agent of the carrier issuing this agreement, shall be without effect, and this agreement shall be enforceable according to its original tenor.

The caretakers who accompany the live stock on live-stock trains are required to release the carriers from liability for personal injury by signing a release known as the "separate contract for man or men in charge of live stock."

**Transportation Charges.**—The railroad rates on cattle and sheep shipped from local points to the central markets commonly vary according to whether the animals are shipped for slaughter, that is, are "market" or "fat" stock, or whether they are "stockers" or "feeders" which will be shipped out of the central markets to the feeding grounds to be raised and fattened. The former kind of cattle and sheep are shipped on the so-called "100 per cent basis," and the latter on the "75 per cent basis." The original intention of the 25 per cent reduction on stockers and feeders was that such stock would be shipped direct from

the ranges to the feeding grounds, but when the practice of shipping them to the central markets arose it was generally applied. The Interstate Commerce Commission has sanctioned the 75 per cent rates on the grounds that the market value of stockers and feeders is from \$1 to \$3 per 100 pounds less than of fat stock, that they are less subject to claims for shrinkage and delay, and that while market cattle and sheep are frequently shipped on a rapid schedule, the stockers and feeders are more commonly shipped in regular freight trains.<sup>7</sup> Since hogs are usually shipped to the central markets for slaughter, the twofold rate basis does not apply to them.

The rates on live stock also vary widely according to points of shipment and destination. Usually, however, they are uniform from many shipping points to the various Missouri River markets, somewhat higher to St. Louis and still higher to Chicago. In the case of live-stock shipments from points in New Mexico, Texas, and Oklahoma to Fort Worth, Oklahoma City and Wichita, the Interstate Commerce Commission prescribed a mileage scale in December, 1911, under which the maximum rates gradually increased with the length of the haul, but not in exact proportion to distance. While this basis does not apply throughout the West it illustrates the general range of live-stock rates. Within the region included in the decision the rates at that time varied from 5½ cents per 100 pounds for a ten mile haul, 8¾ cents for 50 miles, 17½ cents for 200 miles, 32 cents for 500 miles, 44 cents for 800 miles and 52 cents for 1,000 miles.<sup>8</sup>

The commission reported that the average rate for transporting live stock an average distance of 224.1 miles in 1911 was 13.6 cents per 100 lbs. and that the average rate in 1914 was 13.4 cents for an average haul of 212.4 miles. In May 1921 average live-stock rates were reported to range from 17.3 cents in eastern territory to 23 cents in southern territory and 25.95 cents in western territory. Since then live-stock rates have been

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<sup>7</sup> 23 I. C. C. Reports 7.

<sup>8</sup> 22 I. C. C. Reports 160.



reduced somewhat and the average for the country as a whole has been estimated at about 20 cents per 100 lbs.<sup>9</sup>

Live stock is at times stopped in transit for periods ranging from ten days to one year for grazing or fattening, the through freight rate from point of origin to destination, however, being protected. Sheep may be stopped in transit for shearing or dipping, and at many western central markets live-stock shipments may be stopped for the purpose of offering the stock for sale subject to the privilege of reshipment to another market. In-transit privileges such as this apply only when specifically granted in the tariffs of the carriers, and when so granted a special charge in addition to the freight rate is in many instances imposed.<sup>10</sup>

The shippers are also required to pay for the feeding of the stock in transit. They commonly buy the food *en route* and not infrequently from the carriers who provide a supply at the unloading yards. If the carriers do the feeding they have a lien on the live stock for the food provided and the services rendered.

**Public Regulation.**—Nearly all the stock-raising states regulate the transportation of live stock by providing in special statutes that the animals shall be unloaded for food and rest at the end of a given number of hours—usually 28—that stock cars shall be moved at the rate of at least 18 miles per hour on the main line and 12 miles per hour on branch lines, and that free transportation and prescribed caboose facilities shall be provided for necessary live-stock attendants. Some states have additional laws providing for telegraphic information as to stock-car movements, preference to live stock in the matter of car distribution, etc., but such statutes are not general.

The federal government also has enacted a statute which requires the unloading of live stock at the end of 28 hours if shipped interstate commerce.<sup>11</sup> It moreover authorizes the Secretary of Agriculture to establish such rules and regulations

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<sup>9</sup> Joint Commission of Agricultural Inquiry, *Report on Transportation*, Part III, p. 115.

<sup>10</sup> *Ibid.*, p. 110.

<sup>11</sup> Act of June 29, 1906.

concerning transportation as may from time to time seem necessary to prevent the spread of contagious and infectious diseases of live stock,<sup>12</sup> and prohibits the shipment of live stock from quarantined zones except under such rules of "inspection, disinfection, certification, treatment, handling and methods of delivery and shipment as the Secretary may promulgate."<sup>13</sup>

#### LOCAL INSPECTION OF LIVE STOCK

The Bureau of Animal Industry of the United States Department of Agriculture not only inspects the interstate and foreign shipments of live stock at the central and seaboard markets, but in regions where live-stock diseases prevail it inspects the animals at local points of shipment and in transit. Large districts especially in the southern and southwestern states, are quarantined to prevent the spread of Texas and other dangerous fevers, disease-carrying ticks, sheep and cattle scabies and cattle mange. Live stock so quarantined may not be shipped to points outside the quarantined zone without local inspection, and in the case of scabies, not without being dipped or otherwise treated. Certificates such as are shown in Forms 17 or 18 having been issued for animals not actually afflicted, they may be shipped to outside markets, but when possible, care is taken that they are not unloaded in pens used for stock coming from districts which are not quarantined. The original certificate is mailed to the Bureau of Animal Industry, a copy is attached to the railroad billing accompanying the shipment and another sent to the inspection officials of the state in which the shipment originates. Regions may be similarly quarantined to prevent the spread of hog cholera. Live stock may also be locally inspected and tested with a view to detecting tubercular infection and eradicating the disease, and railroad cars and stockyards may be inspected and disinfected.

Local inspection by the federal government is supplemented by state statutes providing for the inspection by state authori-

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<sup>12</sup> Act of Feb. 2, 1903.

<sup>13</sup> Act of March 3, 1905.

ties of sick and suspected animals, the establishing of quarantine zones; the dipping of sheep, and the keeping of railroad cars and stockyards in a sanitary condition. The federal and state authorities sometimes coöperate in the work of checking and stamping out diseases by destroying herds of afflicted animals.

[illegible]

This certificate shall be attached to the railroad billing  
accompanying the shipment.

No. **472156**

L. D. Form 46.

**U. S. Department of Agriculture,**  
**BUREAU OF ANIMAL INDUSTRY.**

This Certifies that \_\_\_\_\_ **CATTLE**

originating in the County of \_\_\_\_\_

State of \_\_\_\_\_, and owned by

(Name.) \_\_\_\_\_

(Address.) \_\_\_\_\_

Consigned to \_\_\_\_\_

(Destination.) \_\_\_\_\_

(Cross out clauses as required.)

have been inspected by me and found **FREE** from  
any symptoms of *scabies (mange)*  
*Texas fever*

have been inspected and found to have been  
**EXPOSED** to the contagion of *scabies (mange)*  
*Texas fever*

have been inspected and found to be **INFECTED**  
with *scabies (mange)*  
*Texas fever*

and have been dipped *once* in \_\_\_\_\_  
*twice*

\_\_\_\_\_ on \_\_\_\_\_

and may be shipped for \_\_\_\_\_

Shipped via \_\_\_\_\_ **R. R.**

Hour loading finished \_\_\_\_\_

Inspector.

(Date.) \_\_\_\_\_, 19

(Place.) \_\_\_\_\_

**22-** This certificate is void 10 days after date.

(CAR NUMBERS ON BACK.)

8-155

This permit is subject to regulations of State to which animals are destined.

## METHODS OF SELLING LIVE STOCK

**Sales Through Central Commissionmen.**—The live stock shipped by western stock growers to the central stockyards is usually sold through commissionmen or brokers. A carload is frequently consigned to a commissionman, the owner intrusting him with the entire care and sale of the animals. The commissionman divides them into lots or "bunches" with a view to obtaining the highest current prices, and sells them to meat packers, wholesale slaughterers, feeders, breeders, stockers, eastern buyers, speculators or traders, and exporters. The selling commissions are regulated by live-stock exchanges, the general charge per head being 90 cents for cattle, 40 cents for calves, 30 cents for hogs and 20 cents for sheep, with maximum charges per carload ranging from \$14 to \$30 and minimum charges per carload ranging from \$13 to \$26.

These commissions charges are somewhat higher in case the live stock shipped in a carload lot is owned by more than one shipper, and also in case of less-than-carload lots.

At the time of sale the price is fixed in terms of so much per one hundred pounds, the entire amount being determined after the animals have been weighed by official exchange weighmasters. The owner is obliged to pay the freight charges from local shipping point to the central markets, the cost of feeding his live stock, a yardage charge, and at some places a terminal or transfer charge for switching the cars from the railroad to the stockyards. After deducting all such charges and his commission from the amount realized on the sale, the commissionman sends the balance to the stockman by bank draft or check. Usually even before final settlement the non-resident shipper receives a statement of the gross proceeds of the sale with necessary deductions.

In the past the central commissionmen frequently financed stock raisers and feeders who required funds between seasons, taking chattel mortgages on their live stock as security for loans. This system has largely, although not entirely, disappeared, for a larger number of stockmen have in recent years

been able to finance themselves, and others are able to obtain funds from local banks and other sources which are financially stronger than they were in the past or from special live-stock loaning institutions.

**Coöperative Live-stock Shipping Associations.**—A more recent development in live stock marketing is the formation by stock growers of coöperative shipping associations. The movement has become of general importance since 1908 but there are instances of successful "lamb clubs" organized over twenty years ago.<sup>14</sup> These associations enable farmers, who do not raise a sufficient number of animals to ship individually carload lots, to combine their shipments into lots of sufficient size and thus to avoid selling to local dealers. The manager of such an association ships the live stock of members directly to the central markets, sees that it is properly cared for en route, and sells it through central commissionmen in the same way that carload shipments are usually sold. The associations may, however, obtain bids directly from central market buyers. In either case the usual effect of the associations is to reduce marketing costs and to obtain higher prices than those offered by local live-stock dealers.

**Sales to Local Live-stock Dealers.**—In regions where the live-stock industry is of secondary importance or wherever the individual farmers have less than full carloads of stock for sale, and have not organized coöperative shipping associations, they may sell to local live-stock dealers. These dealers, many of whom are themselves farmers, canvass the surrounding community for surplus stock, and when they have a carload ship it to the central markets where they sell it in the same way that large ranchers do. They usually buy on their own account, the prices which they pay to the farmers being largely the result of personal bargaining.

**Sales to Local Slaughterers and Retail Butchers.**—Farmers sell a portion of their live stock to local slaughterers and retail

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<sup>14</sup> See D. H. Doane, *The Coöperative Lamb Club as an Agency for Lower Marketing Costs*, *The Annals of the American Academy of Political and Social Science*, Nov., 1913, pp. 216-222; L. D. H. Weld, *Statistics of Coöperation among Farmers in Minnesota*, Minnesota Agricultural Experiment Station *Bulletin No. 146*, pp. 17, 18.

butchers, some of whom depend upon the surrounding agricultural community for all or part of their meat supply. In 1909, for example, the Census Office reported that 7,000,000 cattle and calves, 2,750,000 hogs, and 1,750,000 sheep were slaughtered in retail establishments.

**Country Sales to Packers.**—Western ranchers and feeders sometimes sell their stock directly to meat-packing concerns which may send buying agents to contract privately for the delivery of a specified number of carloads. The packers of the Mississippi and Ohio River valleys, however, buy most of their supply in the public stockyards at current prices which are known alike by sellers and buyers. It is only on the Pacific Slope and at certain points in the corn belt that the country sale by stock grower to packer is a common method of selling live stock. At a few places such as San Francisco and Portland, public live-stock markets have been established and sales may be made through commissionmen, but even there the stock growers and packers may deal directly with each other. The large central western packers maintain country concentration stations at various points in Iowa, Illinois, Nebraska and Minnesota.

**Miscellaneous Sales Methods.**—While the feeders obtain most of their unfed stock in the central stockyards they also buy cattle and sheep directly from ranches and farmers at private sale. Relatively few hogs are sold to feeders, because the farmers usually fatten them for the market, and recently the farmers have to an increasing extent undertaken the feeding of lambs. There are many professional feeders, however, who fatten native lambs and western sheep and lambs and many who feed western range cattle for final sale in the central markets.

Occasionally the grower sells live stock direct to speculators or traders in the country, at times he sells to coöperative purchasers on the range, and there is some direct selling on mail orders.<sup>15</sup> Some auction sales are conducted although they are not of general importance in the sale of live-stock marketed for slaughtering purposes.

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<sup>15</sup> U. S. Department of Agriculture, *Year Book* 1921, pp. 278, 279.

## CHAPTER X

### CENTRAL LIVE-STOCK MARKETS

As the live-stock industry gradually moved from the Atlantic seaboard to the western ranges two thousand miles inland, the central live-stock markets followed in its trail. They are in most instances packing and slaughtering centers, for the refrigeration car service has made it more economical to ship dressed meat and meat products to distant markets than to ship the live animals. Live stock is even now shipped from the ranges to the central markets, a distance in some instances of a thousand miles, and many carloads are shipped to eastern markets, but the stock movement is mainly from the ranges, ranches, farms and feeding grounds to the central markets of the Mississippi and Ohio valleys.

**Central Market Receipts.**—Cincinnati was the original western packing center, and still remains a market of importance, and Cleveland, Detroit, Indianapolis and Louisville are also Ohio Valley markets of considerable moment. The principal western market, however, has long been at Chicago, for it is there that the great packing concerns first constructed their plants and still purchase from 21 to 25 per cent of the packing output of the western live-stock states. From 3,500,000 to nearly 4,500,000 cattle, 7,000,000 to 9,000,000 hogs, and 4,000,000 or 5,000,000 sheep are annually sold in the Chicago market. Twenty-four railroads carry live stock to Chicago not only from the surrounding feeding grounds, but from the local shipping points and smaller central markets of the trans-Mississippi Valley.

Though Chicago is the greatest central market, many others have been established beyond the Mississippi River. The packers look upon them as "subsidiary markets," at which some of their plants are located and from which their Chicago plants receive



a part of their stock supply. In the words of one of the principal packers, "not only have the packers built up a great central cash market (Chicago), but they have gone out to meet the cattlemen by establishing subsidiary markets in the heart of the cattle industry. These outposts of the packing industry have had their advantages to their owners, but I believe they have carried still greater advantages to the cattlemen . . . in that they shorten his haul to market. This not only means a saving of freight, but the avoiding of shrinkage in weight and deterioration in quality. It also means that at the time of sharp demand he can get his cattle into the near market in time to realize the high price, while he would not, perhaps, be able to rush them into the distant central market before the extraordinary demand would be satisfied and prices drop back again. . . . The subsidiary market has immensely influenced the general production of a better quality of beef by facilitating the feeding or 'finishing' of cattle brought in from the ranges. . . . The extension of the packing industry to these points has changed the agricultural map of the states tributary to these auxiliary markets, making them the richest feeding grounds in the country."<sup>1</sup>

The chief trans-Mississippi central markets are at Kansas City, Omaha, East St. Louis, St. Joseph, St. Paul, Sioux City, Fort Worth, Denver, Wichita, Ottumwa, Cedar Rapids and Oklahoma City. The receipts of the first four of these markets have become so large that they can at present scarcely be regarded as mere auxiliary markets.

The Ohio Valley and middle-western markets, including in addition to those previously mentioned (page 229) Milwaukee, Cudahy and Peoria, are chiefly important as hog markets, although they also receive large numbers of cattle and sheep. All told there are fifty centralized live-stock markets in the United States at the present time.<sup>2</sup>

**Central Market Competition.**—The live-stock buyers at the central markets of the West are principally the large western

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<sup>1</sup> J. O. Armour, *The Packers, etc.*, pp. 116, 117.

<sup>2</sup> Federal Trade Commission Report on the Meat Packing Industry, Vol. III, p. 14.

packers, smaller western packers and wholesale slaughterers, eastern packers and slaughterers, exporters, stockers and feeders. The feeders, however, can scarcely be regarded as the competitors of packers and slaughterers as they do not compete for fat stock which is ready for the market. Eastern packers and slaughterers are competitive factors in the western markets but are of declining importance, because long-established practice has shown it to be more economical to ship the dressed meat from the West than to ship the live animals. Though New York, Boston, Baltimore and Philadelphia each receive many live animals annually, their packers and slaughterers depend largely upon the eastern states for their supply, and provide but a small portion of the total meat consumption of the cities in which they are located. The smaller western packers and slaughterers have always been a source of competition in the central markets, but one of limited scope. In the cattle trade it has been pointed out that the five largest western packing companies kill 70 per cent of the live stock slaughtered in interstate commerce.<sup>3</sup>

On the whole there is less active competition in the central live-stock markets than in the primary grain and central cotton markets, because the number of competitive buyers is more limited. There is also less active competition *between* the live-stock centers, because the principal buyers are the same in most of the largest western markets.<sup>4</sup> Each of the five great packing companies, for example, have plants at Chicago and Kansas City, four of them in Omaha and St. Louis, and three in St. Joseph. Intermarket competition in the cattle industry is also modified, in that to some extent the trans-Mississippi markets purchase different grades than are bought at Chicago and other middle-western points. They depend to a larger extent upon the grass-fed cattle of the northwestern and southwestern ranges, while the Chicago market receives more native stock and western and Texas cattle which have been fattened for the market. Though

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<sup>3</sup> Federal Trade Commission, *Summary of the Report on Meat Packing Industry*, p. 11.

<sup>4</sup> Chief packing companies are, Armour & Co., Swift & Co., Morris & Co., Wilson & Co., Inc., and the Cudahy Packing Co.

there is some competition between "feeders and stockers" and fed cattle, the prices paid for the former are lower and do not uniformly fluctuate with the prices paid at Chicago for corn-fed stock.

The stock grower is not, however, in a helpless position. The increased demand for meat as compared with its supply has in recent years resulted in a higher price for live-stock; the foreign market for cattle is available, and may be used whenever differences in prices warrant; the smaller packers and slaughterers of the West and East are appreciable factors in the live-stock market; and the probability of "potential competition" would prevent an unreasonable and permanent depression of live-stock prices as compared with the price of dressed meats and meat products. During the great packing-house strike of 1904, for example, the increased purchases of the smaller packers and slaughterers did much to support the live-stock markets. "The strike made evident the fact that there are hundreds of slaughtering establishments which now operate at much less than their full capacity, and that it is a matter of a few days only for them materially to increase their output."<sup>5</sup>

**Shipment from Central Markets.**—From 20 to 30 per cent of the hogs, 45 to 50 per cent of the cattle and 35 to 40 per cent of the sheep annually received at the central live-stock markets of the West are shipped out of them as live animals. These shipments, however, are gross rather than net, for the central markets ship to one another, Chicago and other middle-western markets regularly receiving many animals which were originally sold by the stock growers in the markets of the trans-Mississippi Valley. The bulk of the live stock received at the central markets of the West is slaughtered by the western packers and wholesale slaughterers and is shipped to all parts of the United States and to many foreign markets in the form of dressed meat and meat products.

The live animals shipped out of the central markets are variously disposed of:

1. Feeders are shipped to nearby farms and feeding grounds,

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<sup>5</sup> Bureau of Corporations, *The Beef Industry*, p. 84.

to be returned to the central markets for final sale. Many of the stockers are similarly handled, although some of them are retained on the farms for dairy or breeding purposes.

2. Many of the shipments, particularly from the trans-Mississippi markets, are destined to Chicago, Indianapolis, Cleveland, Detroit, Cincinnati, Louisville and other central markets in the Ohio Valley.

3. Some live stock is regularly shipped from the western stockyards to eastern live-stock markets such as Buffalo and Pittsburgh in the interior and New York, Boston, Baltimore and Philadelphia on the seaboard, to be slaughtered by eastern packers and slaughterers.

4. During the years 1906 to 1908 from 30,000 to nearly 600,000 live cattle were annually exported to foreign markets, but from then until the beginning of the European war the number varied from 100,000 to 200,000. During the war period the export trade in live cattle almost disappeared, and since then it has varied from 70,000 to 145,000 annually. Although these exports may pass through the ports, they originate largely in the western live-stock markets. They were for many years destined largely to Great Britain. Recently, however, the principal foreign markets for live cattle have been found in Mexico, Cuba, Canada and some of the continental European countries. The annual exports of American sheep and hogs have never exceeded 270,000 and 81,000 respectively.

The export trade in live beef animals has been largely displaced by the huge quantities of meat products which have for many years been exported to Great Britain, Germany, the Netherlands, Belgium, France and other European countries and to the West Indies, Canada, Mexico and other non-European markets.

The live stock shipped out of the western centers is generally purchased at the stockyards of those markets. The feeders and stockers are purchased by farmers and professional stockmen; the eastern shipments, by eastern packers and slaughterers; and the export cattle, by western packers and export concerns or by exporters located at eastern ports. The stock shipped from one western center to another may be purchased either at the ship-

ping or at the receiving center by any of the various types of central cattle buyers.

**Relative Importance of Packers and Wholesale Slaughterers.**—The Thirteenth Census of the United States reported the relative proportions of the total slaughter of cattle, sheep and hogs by packing and wholesale slaughtering plants, retailers and farmers during the year 1909 to be as shown in Table No. IX.

TABLE IX  
PERCENTAGE OF LIVE STOCK SLAUGHTERED BY DIFFERENT TYPES OF SLAUGHTERERS

Live Stock <sup>1</sup>	Per Cent Killed by Packers and and Wholesale Slaughterers	Per Cent Killed by Retailers	Per Cent Killed on Farms
Cattle. . . . .	59.6	30.0	10.3
Calves. . . . .	38.4	44.2	17.4
Sheep. . . . .	83.2	13.2	3.6
Hogs. . . . .	63.6	7.5	28.9

<sup>1</sup> U. S. Census, Vol. X, (1910), p. 344.

**Functions of Central Markets.**—(1) The live-stock centers of the Mississippi and Ohio valleys serve as great cash markets where cattle, hogs, sheep, horses and other meat and draft animals may be sold by stock growers, feeders and local dealers. (2) They provided facilities for the handling, care, feeding, weighing, buying and selling of live stock, and the financing of sales. (3) Through their exchanges they enforce rules governing the purchase and sale of live stock. (4) They facilitate the collection of information as to the supply and demand, and other considerations influencing the trade. (5) While live-stock prices are not general as are those of grain and cotton, the central markets do much to facilitate the quotation and publication of prices. (6) They serve as central points from which live stock may conveniently be shipped to stockmen, feeders and eastern buyers, and be exported to foreign markets. (7) Most of the central markets are great packing and slaughtering centers, indeed, they are the final market for about 70 per cent of their

entire receipts of cattle, hogs and sheep. (8) Their concentration of large numbers of animals at relatively few places, and their close connection with packing and slaughtering plants greatly facilitate the federal and state inspection of live stock and meats.

#### ORGANIZATION AND DESCRIPTION OF CENTRAL MARKETS

**The Stockyards.**—The live-stock trade of the central markets is conducted at large stockyards owned and operated by stockyard companies. Usually nearly all the business of a particular market is confined to the yards of a single large company, such as the Union Stock Yards and Transit Co. of Chicago, the Kansas City Stock Yards Co., the Union Stock Yards Co. of Omaha, and the St. Louis National Stock Yards. These companies are owned largely by the packing concerns and the railroads, but the yards are open markets available to all who desire to buy or sell live stock. They are located in the suburbs of the cities, the yards and nearby packing and slaughtering plants being the basis of packing towns of considerable population and area. The Union stockyards at Chicago have an area of 500 acres and are able at one time to hold 75,000 cattle, 125,000 sheep, 300,000 hogs and 6,000 horses and mules.<sup>6</sup>

The Government has made an effort to compel the meat packers to sell their interest in the central stockyards. In the so-called consent decree of February 27, 1920 the Supreme Court of the District of Columbia, enjoined the packers from directly or indirectly owning capital stock in public stock-yards companies. Since then various plans have been proposed and much difficulty has been encountered in the effort to bring about actual divorcement of public stockyards from packer control. The objections raised against ownership by large meat packing concerns are that, although the central stock-yards have remained public markets open to all, ownership has resulted in various advantages to packers, namely, control of various rendering

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<sup>6</sup> Frank Andrews "Cost and Methods of Transporting Meat Animals," U. S. Department of Agriculture, *Year Book*, (1908), p. 236.

companies, cattle loan companies and live-stock banks, of advantageous packing-house sites, and of the profits derived directly from the operation of the stock-yards.

The stockyards are divided into sections and blocks with main driveways, alleys and overhead viaducts. They are fully equipped with stock houses and pens, feed and water boxes and troughs, running water, dipping vats, receiving and shipping platforms, railroad switching tracks and scales. Adjacent to them are packing, slaughtering and rendering plants, and nearby are the offices of the commissionmen or brokers who do the buying and selling for their customers, the office of Stockyards and Live-stock Exchange Officials, banks where balances may be settled, cattle loaning companies, telegraph offices, restaurants and in some instances hotels. The companies provide the necessary number of employees to feed, water and weigh the stock, issue weight tickets and keep the yards in a sanitary condition.

The charges assessed at the stockyards for the various services performed, include (1) a "yardage charge" of a flat amount per head or carload for providing necessary facilities and for performing the services of placing and keeping the animals in pens and watering them; (2) a feeding charge of varying amounts per bushel of grain, cwt. of bran or ton of hay or alfalfa; (3) a bedding charge of varying amounts per car for providing material and bedding cars for reshipment; (4) a dipping charge of fixed amounts per head in case sheep are dipped at the central stockyards; and (5) loading and unloading charges on a per-car basis. The latter, however, when charged by the stockyard company have usually been absorbed by the railroads, and they have since 1920 been specifically regulated in section 418 of the Transportation Act as follows:

Transportation wholly by railroad of ordinary live stock in carload lots destined to or received at public stockyards shall include all necessary service of unloading and reloading en route, delivery at public stockyards of inbound shipments into suitable pens, and receipt and loading at such yards of outbound shipments, without extra charge therefor to the shipper, consignee or owner, except in cases where the unloading or reloading en route is at the request

of the shipper, consignee or owner, or to try an intermediate market, or to comply with quarantine regulations.

(6) A weighing charge of fixed amounts per carload upon arrival or departure is as a rule absorbed by the carriers.

Other charges may be assessed at the central live-stock markets by the railroads. A switching charge may be collected in case of interline switching between the railroad which transports the live stock to the central market and a stockyard terminal which makes actual delivery at the stockyard, but this charge is likewise absorbed by the line-haul railroad. A trackage charge may arise when a line-haul railroad uses the tracks of a terminal railroad for direct deliveries, the charge being absorbed by the former. Should, however, a railroad reconsignment charge be imposed at the central markets the special charge for this privilege is in addition to the freight rate.

**Live-stock Exchanges.**—The buying and selling is conducted in accordance with the rules of the live-stock exchanges which have been organized at the western markets. In case of the Chicago Live Stock Exchange, for example:

Any person of good character and credit, and of legal age, whose interests are centered at the Union Stock Yards of Chicago, Illinois, on presenting a written application, endorsed by two members, and stating the name and business avocation of the applicant, after ten days' notice of such application shall have been posted on the bulletin of the Exchange, may be admitted to membership in the Exchange, upon approval by at least six affirmative ballot-votes of the Board of Directors, and upon payment of an initiation fee of Twenty-five dollars—\$25.00—or on presentation of a certificate of unimpaired or unforfeited membership, duly transferred, and by signing an agreement to abide by the Rules, Regulations and By-Laws of the Exchange, and all amendments that may, in due form be made thereto.<sup>7</sup>

The organization of the live-stock exchange is similar to that of grain and cotton exchanges. They have a president; one or more vice-presidents; a secretary; a treasurer; and arbitration, appeals, prosecuting and other committees. They have regula-

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<sup>7</sup> The Chicago Live-stock Exchange, Rules and By-Laws, 1922, rule No. 9.



tions prohibiting the violation of the stock inspection rules, dealing in condemned live stock, wash sales, fictitious price quotations and rebates, improper solicitation of live stock consigned to another member of the exchange, and other practices regarded as undesirable. They fix the hours during which trade may be conducted and the minimum and maximum commissions charged for buying and selling.

The live-stock exchanges, however, differ from the large grain and cotton exchanges in that they are spot or cash markets. There are certain so-called "speculators" and "yard-traders" at the stockyards, but as speculative "futures" are not bought and sold on the live-stock exchanges they are obliged to conduct a cash business.

**Sale at the Stockyards.**—Stock cars are usually, though not always, timed so that the live stock arrives at the yards early in the morning. The stock is then unloaded, driven to selling pens, and fed and watered. The commissionman acting for the shipper then divides the animals into "bunches" of from one to several hundred with a view to adjusting the number to the needs of a prospective buyer or to obtaining uniformity in character and quality. "Such uniformity," states the Bureau of Corporations, "makes it easier to determine the value of the bunch than would be the case if the animals were mixed. This classification for the purpose of sale, which is sometimes made at the instance of the buyers, but more often at that of salesmen, is most conspicuous in the case of cattle. A mixed shipment of cattle is usually divided according to sex; cows are separated from heifers, bulls and stags from steers, and often there is a further subdivision of steers according to age or quality."<sup>a</sup>

The sales are made in terms of one hundred pounds, final settlement being made after the animals have been weighed on scales which are usually in charge of weigh masters, and which hold fifty to sixty cattle at one time. The weight tickets issued at the scales, which are the basis of settlement, show the number of animals weighed, their weight and the names of the commissionman and buyer. Animals which the federal or state inspec-

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<sup>a</sup> *The Beef Industry*, p. 16.

tors have not found to be diseased are then taken to the packing and slaughtering plants or to shipping pens for shipment to farms, feeding grounds and eastern, western or foreign markets.

In settling for the live stock, the commissionman, representing the original owner, makes out a bill on the basis of the weight shown in the sale ticket or record and the price per one hundred pounds agreed upon. The buyer indorses the bill and returns it to the commissionman with order or check attached, and when paid by the bank the accepted bill serves as the commissionman's receipt of the transaction. He then deducts from the gross proceeds the railroad freight charges, feeding costs, weighing fees or yardage, other stock-yards and handling charges if any are due, and his commission, and pays the balance to the shipper. If his customer is non-resident he usually sends a statement of gross proceeds and deductions to him immediately after the sale, and a check or draft after settlement has been made. There are one or more banks of good credit near each of the large stockyards which make a special business of financing live-stock transactions.

**Marketing Costs.**—The cost of marketing live stock varies to some extent in the different central markets. Under conditions obtaining before the war the total cost of shipping a steer from the ranges of the northwestern grazing grounds to Chicago and marketing it at that center varied approximately from \$5 to \$9. The various items were substantially as follows:

	Low	High
Trailing to local shipping point.....	\$0.05	\$0.25
Railroad freight.....	3.85	7.26
Feed en route (at \$2 per car).....	.16	.32
Shippers in charge (\$12 per car).....	.08	.08
Switching charges at Chicago (at \$1 per car) ..	.04	.04
Feed at Chicago.....	.25	.25
Yardage at Chicago.....	.25	.25
Commission at Chicago.....	.50	.50
Total.....	\$5.18	

In its report of December, 1919 on the cost of marketing

live stock the Federal Trade Commission<sup>9</sup> listed the various items entering into the marketing of seventy-nine carloads of steers weighing from 1,040 to 1,223 pounds each as follows:

Freight cost per 100 lbs.....	17.2 cents
Feed cost per 100 lbs.....	3.4 cents
Commission cost per 100 lbs.....	5.7 cents
Other charges per 100 lbs.....	2.3 cents
	<hr/>
Total.....	28.6 cents

No item for feed en route appears in this average because the hauls were not long enough to require unloading and feeding under the 28-hour law. Moreover, no allowance is included for the cost of care-takers en route, and the calculation begins at the local shipping point instead of at the ranch. The steers were shipped to comparatively nearby central markets, the rail hauls ranging from 182 to 238 miles. A marketing expense item of some moment is the shrinkage of live stock en route. It averaged 4.02 per cent or 40 pounds for a 1,000-pound steer.

### THE PACKERS AND STOCKYARDS ACT

In 1921 Congress enacted a regulatory statute known as the Packers and Stockyards Act, effective Aug. 15, 1921. A portion of the Act regulates the distribution of meat and meat products by packers engaged in interstate and foreign commerce. The sections directly applicable at this point are those regulating stockyard companies and stockyard marketing agencies. They are required to be registered with the Secretary of Agriculture. Their services and charges are to be reasonable and may not be unduly discriminating. Schedules of their charges, rules and regulations must be posted for public inspection and filed with the Secretary of Agriculture and no changes may be made effective without a prior notice of ten days. The Secretary of Agriculture is authorized to hold hearings and make investigations to determine the reasonableness of their charges, rules,

<sup>9</sup> *Report on the Meat Packing Industry*, Vol. VI, p. 150.

regulations and practices, and in case he finds them to be unreasonable or unduly discriminatory, to prescribe reasonable charges, rules, etc., to take their place. Packers, stockyard companies, live-stock dealers and market agencies are also required to keep accounts, records and memoranda correctly and fully disclosing their transactions and their true ownership or control. The Secretary of Agriculture is given power to prescribe the form of such accounts, records and memoranda.

### LIVE-STOCK INSPECTION AT CENTRAL MARKETS

There is no public or exchange inspection of live stock for the purpose of establishing commercial classes or grades. Some of the live-stock exchanges have established rules governing the dockage and shrinkage of hogs, and have inspectors to enforce their rules and determine the number of unmerchantable and inferior hogs in a given lot. Some of them also have brand inspectors to ascertain errors or dishonesty in the brands of western and Texan cattle, but commercial classification and grading is left to the individual sellers, commissionmen and buyers.

Public inspection of live stock at the central yards is concerned with disease, sanitation and public health. The Bureau of Animal Industry of the Department of Agriculture is equipped with live-stock and meat inspectors, chemists, patrolmen, etc., for the inspection of interstate and foreign shipments of live stock and meats in all their stages of slaughtering, curing, canning, or other preparation. The federal inspection laws also provide for sanitary equipment, conditions and methods, and prohibit the use of harmful chemicals and preservatives and of misleading brands.<sup>10</sup>

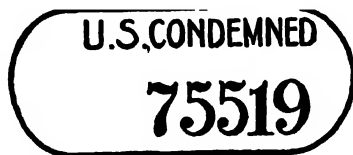
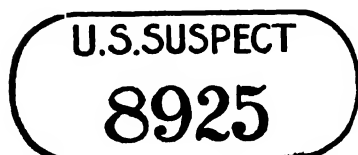
When subjected to the ante-mortem examination, the animals are tagged as "condemned or "U. S. suspect," each tag being numbered (*See Form No. 19*). Condemned animals may not be sold, while a sale of suspected animals is not finally com-

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<sup>10</sup> The acts under which inspection is conducted are the Meat Inspection Act and Food and Drug Acts of June 30, 1906, as amended to date, and the Tariff Law of Sept. 21, 1922.

pleted until after a post-mortem examination has been made. Suspected animals are set apart from those which are passed, and are separately slaughtered.

Any carcass or parts which are found to be unsound during the post-mortem examination at the packing and slaughtering plants are marked "U. S. inspected and condemned" and are sent to the "condemned" rooms to be denatured or tanked so as to make them useless for food purposes. Those suspected of disease during the post-mortem inspection are marked "U. S. retained" and removed to separate compartments known as "retaining rooms" for final inspection, and if found to be unsound they are later sent to the condemned rooms (*see* Form No. 20). Those passed on condition that they be rendered



FORM XIX.

into lard or tallow or otherwise sterilized are marked "U. S. passed for sterilization," and those found healthful, wholesome and fit for human food are marked "U. S. inspected and passed."

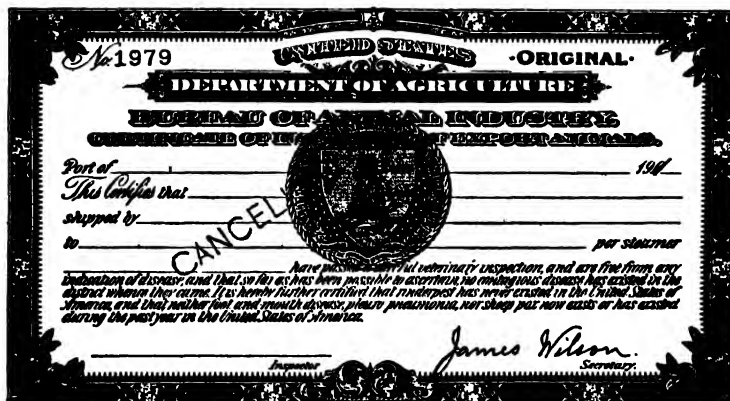
Particular care is taken in the case of animals or meats exported to foreign markets. Many of the export cattle are inspected first at the interior markets and again at the ports. They are tagged for identification at the interior yards and records are kept so that an outbreak of disease may be traced back to its origin. The ocean vessels which carry them are also inspected as to sanitation, fittings, feed, water, attendants, etc., so that the animals may arrive in good condition, and with the exception of some destinations which have been exempted, the vessels may not clear until the Department of Agriculture has issued a certificate of inspection such as is reproduced in

Form No. 21. Export meat is likewise subjected to special inspection. The packages have attached to them "export



FORM XX.

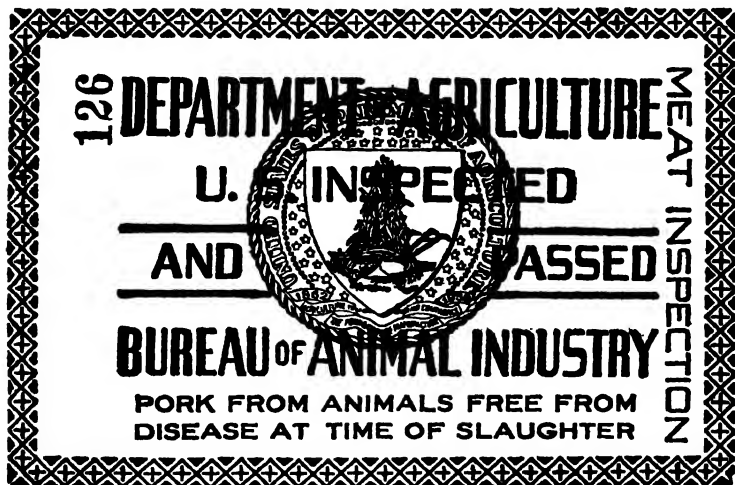
stamps" such as are shown in Form 22, some stamps being attached on request of the shipper and others being required



FORM XXI.

by the regulations of the U. S. or foreign governments. Meat and meat products, moreover, may not be shipped to Great

Britain, Europe, Canada, various Latin American countries or the French Antilles without obtaining from a government inspector an "export certificate" showing the names of the exporter



FORM XXII.

and consignee, destination, numbers of stamps, if any, shipping marks, kind of product and weight (*see* Forms 23, 24, 25 and 26). Form No. 24, when issued for exportation to certain countries, as to France and Canada, contains the special certificate on the reverse side required by the governments of those countries.

As federal inspection applies only to interstate and foreign shipments, some of the states also regulate the construction, equipment and sanitation of packing and slaughtering establishments, and make provision for inspection by state inspectors. Some municipalities further supplement federal inspection by prohibiting the local sale of unsound meat and providing for municipal inspection.

194223

**DEPARTMENT OF AGRICULTURE**

**INEDIBLE PRODUCT**

**BUREAU OF ANIMAL INDUSTRY**

PRODUCT OF ANIMALS FREE OF  
CONTAGIOUS DISEASE

FORM XXII-A.

468306

**DEPARTMENT OF AGRICULTURE**

**INSPECTED**

**PASSED**

**BUREAU OF ANIMAL INDUSTRY**

WARNING. NOTICE IS HEREBY GIVEN THAT THIS STAMP  
MUST BE DESTROYED WHEN THE CONTENTS OF THE  
PACKAGE UPON WHICH IT IS PLACED HAVE BEEN REMOVED.

FORM XXII-B.



No. 1050491

UNITED STATES DEPARTMENT OF AGRICULTURE

•ORIGINAL•

DEPARTMENT OF AGRICULTURE

BUREAU OF ANIMAL INDUSTRY

Description and marks \_\_\_\_\_ 18 \_\_\_\_\_

This Certifies that the meat and bones specified in the margin hereof exported by \_\_\_\_\_ and consigned to \_\_\_\_\_

is from animals that received a postmortem inspection and were found sound and passed as provided by law. It has been inspected and found sound and wholesome. \_\_\_\_\_ of the Department and is

*Henry C. Wallace*

NOT VALID UNLESS SUBSCRIBED BY AN INSPECTOR OF THE BUREAU OF ANIMAL INDUSTRY

## LIVE-STOCK PRICES

There is no general wholesale price in the cattle, hog or sheep trades as there is in the grain and cotton trades. In the cattle

No. 512464 **UNITED STATES - ORIGINAL -**  
**DEPARTMENT OF AGRICULTURE**  
**BUREAU OF ANIMAL INDUSTRY**

Description and marks: \_\_\_\_\_

*This Certifies that the meat or \_\_\_\_\_ specified in the margin hereof*  
 exported by: \_\_\_\_\_  
 and consigned to: \_\_\_\_\_

*is from animals that received \_\_\_\_\_ inspection and were*  
*found sound and healthy and \_\_\_\_\_ passed and is sound and*  
*wholesome and has been prepared \_\_\_\_\_ according to the specifi-*  
*cations or directions of the foregoing \_\_\_\_\_ cations by law and the regula-*  
*tions of the Department.*

*Not valid unless countersigned by an Inspector*  
*of the Bureau of Animal Industry.*

Inspector: *Henry C. Wallace* Secretary: \_\_\_\_\_

FORM XXIV.

markets, for example, although the prices of native, western and Texan steers constitute general guides, the actual prices paid for particular lots vary according to quality, character, conditions of production and other considerations. There

No. 10917 **UNITED STATES - ORIGINAL -**  
**DEPARTMENT OF AGRICULTURE**  
**BUREAU OF ANIMAL INDUSTRY**

Description and marks: \_\_\_\_\_

*This Certifies that the INEDIBLE PRODUCT specified in the margin hereof*  
 exported by: \_\_\_\_\_  
 and consigned to: \_\_\_\_\_

*is from animals free of contagious disease*

*John H. Webster* *James Wilson*  
 Inspector Secretary


**CANCELLED**

FORM XXV.

is no distinct basis grade of cattle as there is of cotton or wheat. There is likewise no individual market or small group of markets which determine cattle prices throughout the country. Chicago prices show the general movement of cattle prices but cannot be taken as a standard, because they are usually higher than in markets located further west and their fluctuations are influenced by a relatively large proportion of corn-fed cattle. The Chicago, Kansas City, Omaha, Fort Worth, East St. Louis and St. Paul markets are the principal price determining markets. There is, moreover, no great speculative live-stock market where future conditions of supply and demand are so system-

656 ORIGINAL.

DEPARTMENT OF AGRICULTURE  
BUREAU OF ANIMAL INDUSTRY

*This Certificate*  *horse-meat product specified in the margin hereof*

inspected by \_\_\_\_\_

and consigned to \_\_\_\_\_

is from animals that have been inspected and passed as provided by law and the regulations of the Department and are found sound and healthy.

*D. A. Hutton*

INSPECTOR

FORM XXVI.

atically discounted as in the grain and cotton trades. There is of course a general relation between the prices paid at the various central live-stock markets, for spot exchanges have been organized, telegraphic connections have been established, the prices of the leading classes of live stock are published in the daily press and in live-stock trade journals, and the principal buyers at most of the western markets are the large packing companies.

Since most of the stock throughout the West is shipped direct to central markets by the growers, individually or in coöpera-

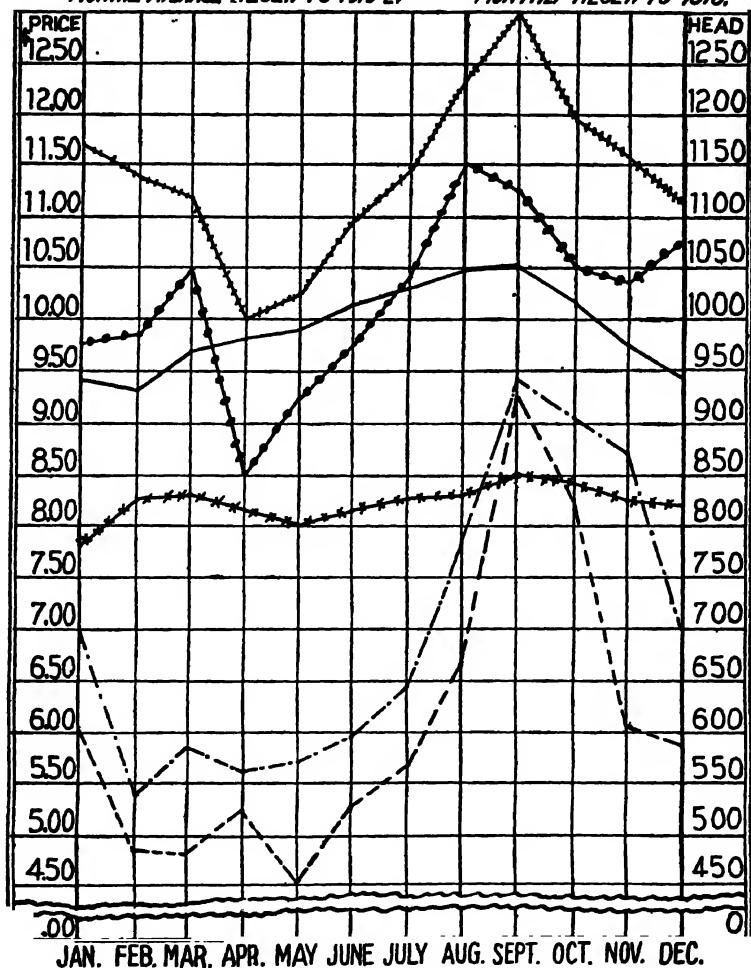
tion, country and central market prices are in many cases synonymous. The prices paid by local dealers to farmers who do not sell at the central markets bear a general relation to the prices paid in those markets, for there frequently is competition between different local dealers and between dealers and retail butchers. Central market prices, moreover, are published in newspapers and farm journals where they can be readily seen by farmers. In many instances, however, the country prices are the product of individual bargaining, the dealers endeavoring to buy as far as possible under the prevailing central market prices.

The fine adjustment of a general level of prices from one crop-year to another which is so clearly defined in the grain and cotton trade under normal conditions does not occur in the live-stock markets. Live stock is not a crop to be harvested at fixed times and then to be marketed before the next annual crop is available. Although the movement of live stock to market is subject to a seasonal variation, this variation is not as pronounced as in the grain and cotton trades. Indeed the prices paid for live stock at the central markets largely influence the volume of live-stock receipts at any given time. This reaction of prices upon market receipts although not entirely absent in case of distinctly seasonal crops is especially in evidence in case of beef cattle and is largely responsible for the frequent failure of the general level of beef cattle prices to correlate inversely with the number of animals on the farms of the United States or with the number received at the central markets.

In general, live-stock prices are primarily influenced by considerations of supply and demand. Throughout periods when the number of beef cattle, sheep and hogs produced has declined, there has usually been a gradual increase in prices. Ordinarily light receipts at the central markets also tend to raise prices and heavy receipts to depress them, but current price fluctuations from month to month, in case of cattle, usually do not fluctuate inversely with receipts. On the contrary the combined monthly average prices of good beef steers

**CATTLE: MONTHLY AVERAGE PRICES 1910-21 AND MONTHLY PRICES 1913 PER  
100 POUNDS OF GOOD BEEF STEERS AND CALVES AT CHICAGO  
MONTHLY AVERAGE RECEIPTS 1910-21 AND MONTHLY RECEIPTS 1913 AT**

• MONTHLY AVERAGE PRICES STEERS 1910-21 \* \* \* \* MONTHLY PRICES STEERS 1913  
• MONTHLY AVERAGE PRICES CALVES 1910-21 —•—•— MONTHLY PRICES CALVES 1913  
• MONTHLY AVERAGE RECEIPTS 1910-21 ---- MONTHLY RECEIPTS 1913.



**DIAGRAM VI.—MONTHLY AVERAGE BEEF CATTLE PRICES AT CHICAGO.**

at Chicago during the twelve-year period 1910 to 1921 correlate directly with receipts during all but a few months (*see* diagram No. VI). As stated by the Department of Agriculture in a discussion of beef cattle prices: "Price is the most important factor in marketing cattle. It attracts supplies and moves them from place to place. Neither distance, time nor almost any other consideration is too great an obstacle to be overcome provided the price is high enough to warrant the effort. Prices at public markets show seasonal fluctuations, just as receipts do. While general price levels vary from year to year, the upward and downward savings occur, on the average, at about the same season of the year. There is, of course, a rather close correlation between these price savings and variations in available supplies."<sup>11</sup>

A glance at diagrams VII and VIII will show that current hog and sheep price movements from month to month during a given year are more prone to correlate inversely with the available supply of animals as measured by central market receipts. During the months from March to May, when the market receipts of sheep usually are at their lowest level, sheep prices are ordinarily at their highest level; and then, as market receipts increase during the summer and autumn, prices gradually decline. Similarly hog prices (*see* diagram VIII) have usually declined during months of increasing market receipts and advanced during months of declining receipts.

The substantial leveling or equalization of prices during the crop-year attained in the case of cotton and grain does not prevail in any of the live-stock trades. Live-stock prices are generally subject to comparatively wide fluctuations and seasonal variations. The dependence of beef cattle market receipts upon current prices has been the dominant factor in this branch of the live-stock trade, and the absence of a distinct seasonal demand to counterbalance the pronounced seasonal movement to market of hogs and sheep has deterred price equalization. The live stock ready for slaughter received at the central markets is not adapted for storage and gradual distribution; even the meat and some of the meat products derived from the

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<sup>11</sup> *Year Book*, 1921, pp. 292, 296.

**SHEEP:— MONTHLY AVERAGE PRICES 1910-21 AND MONTHLY PRICES 1913 OF NATIVE AND WESTERN SHEEP PER 100 POUNDS AT CHICAGO**  
**MONTHLY AVERAGE RECEIPTS 1910-21 AND MONTHLY RECEIPTS 1913**  
**AT CHICAGO, OMAHA, KANSAS CITY AND EAST ST. LOUIS COMBINED.**  
**(IN THOUSANDS)**

— MONTHLY AVERAGE PRICE 1910-21 \* \* \* \* \* MONTHLY PRICES 1913  
 - - - MONTHLY AVERAGE RECEIPTS 1910-21 • • • • • MONTHLY RECEIPTS 1913

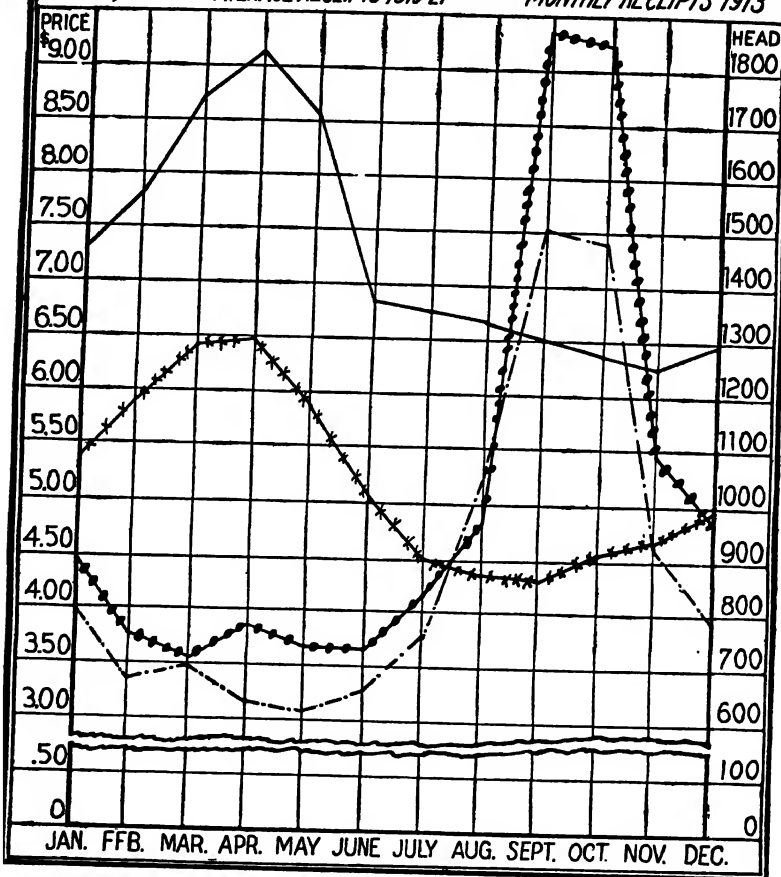
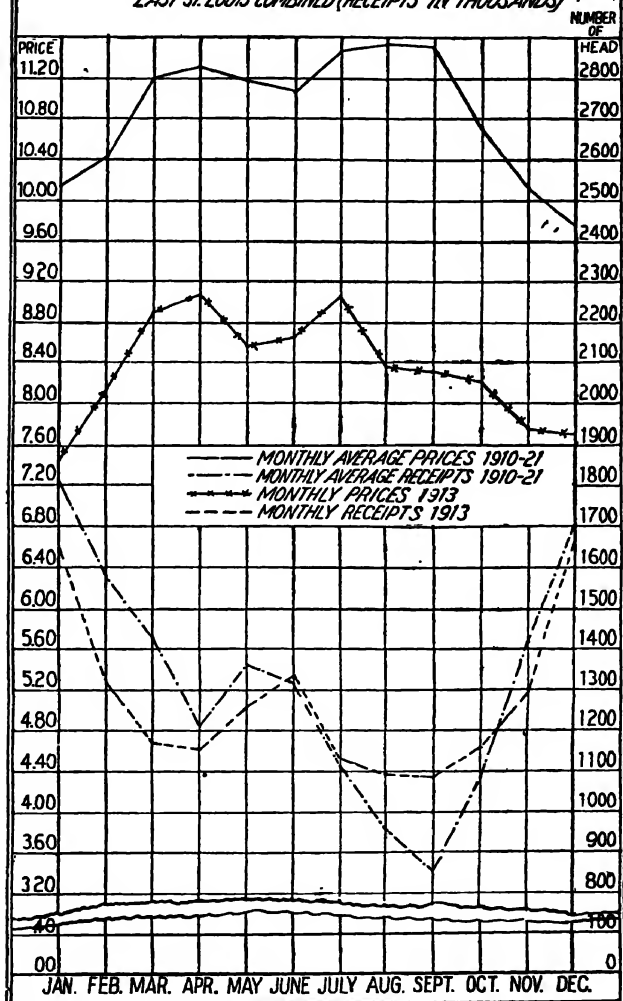


DIAGRAM VII.—MONTHLY AVERAGE PRICES OF SHEEP AT CHICAGO.

**HOGS: MONTHLY AVERAGE PRICES 1910-21 AND MONTHLY PRICES 1913 PER 100 POUNDS AT CHICAGO.**

**MONTHLY AVERAGE RECEIPTS 1910-21 AND MONTHLY RECEIPTS 1913 AT CHICAGO, OMAHA, KANSAS CITY AND EAST ST. LOUIS COMBINED (RECEIPTS IN THOUSANDS)**



**DIAGRAM VIII.—MONTHLY AVERAGE PRICES OF HOGS AT CHICAGO.**



slaughtered animals are perishable to a degree necessitating comparatively rapid distribution. Perhaps the absence of organized speculation in future contracts in the live-stock markets also has a bearing upon the seasonal movement of live-stock prices.

Live-stock prices are also influenced by considerations of quality.<sup>12</sup> Differences in quality largely explain the difference between the prices of native and Texan cattle, range cattle and corn-fed cattle, steers and cows, cattle and calves, sheep and lambs. Quality for meat purposes depends to some extent upon the nature of the breed. The Texan "long-horns" which were so numerous in the past compare unfavorably with the fancy beef cattle which are displacing them. Southern "razor-backs" compare unfavorably with the improved breeds of hogs in the corn belt, and ordinary wool-growing sheep with sheep bred both for mutton and wool.

Weight is also a consideration affecting quality. Price records indicate that for stock of a given sex and age, "the higher average weight carries with it in each case a higher average price."<sup>13</sup> Sex and age are factors of quality, and so are the dressing percentage or amount of beef, pork or mutton per one hundred pounds of live weight, the kind of food used, and the value or probable value of by-products such as the hides and lard.

While the *cost of production* does not determine live-stock prices it too exerts an influence. Prices have at times been below cost, but unless they are sufficiently high to yield a profit to ranchers, rangers, farmers or stock feeders a reaction upon the number of animals raised gradually follows. The principal cost items are land and other capital costs, range rentals, labor, food or forage, losses from diseases or other causes, taxes, fuel for sheep and cattle camps, and in some cases the cost of obtaining a water supply and of dipping diseased stock. In the case of farmers or feeders who purchase range stock and young animals to prepare them for market the chief items are the cost of the feeders and stockers and the cost of corn or other

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<sup>12</sup> See Bureau of Corporations, *The Beef Industry*, pp. 106-118.

<sup>13</sup> *Ibid.*, p. 111.

feed. Whether the farmers are corn growers or purchase it from others, the price of corn affects the price of live stock, for if the price of fed animals is relatively too low it becomes unprofitable to feed them with corn. In the case of sheep the cost of production is charged partly to their mutton and partly to their wool value.<sup>14</sup> The increase in many of these cost items in recent years is reflected in the increased prices of live stock.

Similar to cost of production are *transportation and marketing costs* which have been discussed in another connection. Marketing costs are so small that they exert little influence upon prices, but transportation costs are partly responsible for the price differences existing between the markets of the Far West, those of the Ohio Valley and those on the Atlantic seaboard. Differences in transportation costs and quality are mainly responsible for the higher level of cattle prices paid at Chicago than at the central markets of the trans-Mississippi Valley.

General price factors not peculiar to live stock are discussed in Chapter XX.

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<sup>14</sup> For statistics see Tariff Board, *Wool and Manufacturers of Wool*, Vol. I, pp. 315-377.

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\* References designated by an \* apply also to Chap. IX.

## CHAPTER XI

### THE WOOL MARKET

The wool trade of the United States differs from the agricultural trades considered thus far in the great distance which separates the central markets from the principal sources of the domestic supply. The ranges of the Rocky Mountains are from two to three thousand miles distant from the Boston wool market, the largest in the country. The wool trade is also affected to a much greater extent by production in foreign countries, more than fifty per cent of the annual mill consumption being imported from abroad, although the American output of wool has for many years been partially protected by high import duties. The methods of buying, selling, concentrating and distributing wool, moreover, contain distinguishing trade features.

### SUPPLY AND DISTRIBUTION OF WOOL

**Wool Production in the United States.**—The status and distribution of the sheep-growing industry of the United States as discussed in the preceding chapters, indicates in general the sections of the country which are important in the production of wool. The wool trade, however, is more particularly concerned with that portion of the industry which produces wool as distinct from mutton and lamb. Wool production, even more than sheep production, is confined largely to the three far-western districts—the northwestern and southwestern mountain ranges and the Pacific Slope. (*See Map No. XV*) Not only has the total number of sheep raised in the leading central Mississippi and Ohio Valley states declined greatly since the seventies and eighties, but many of the sheep growers

in these states have undertaken the production of mutton and lamb in preference to wool. Although they produce some of the finest wool grown in the United States, their merino and other fine wool flocks have been displaced or crossbred with English mutton breeds.<sup>1</sup> Wool has been graded largely on the basis of the percentage of merino blood in the sheep, and on this basis it is estimated that but 23 per cent of the wool grown east of the Mississippi and in Minnesota, Iowa and Missouri grades above "half-blood," while 8 per cent grades as "half-blood," and 69 per cent as  $\frac{3}{8}$  blood and below.<sup>2</sup>

The great decline in the number of sheep raised in the Ohio and central Mississippi valleys since the seventies and eighties was more than counterbalanced by the growth of the sheep industry in the western states, particularly in Wyoming, Montana, Idaho, Texas, Colorado, New Mexico, Arizona, California, Utah and Oregon. A much larger proportion of the sheep of these mountain and far-western ranges, moreover, consists of fine wool types, for although the growers of northwestern mountain states breed for mutton as well as wool, merino and rambouillet sheep still predominate. It is estimated that 66 per cent of the total wool produced in the mountain and Pacific states grades above, and 22 per cent as  $\frac{1}{2}$ -blood wool, and but 12 per cent as  $\frac{3}{8}$ -blood or below. These range states, which are more fully described in Map No. XVI, now produce over 65 per cent of the country's wool clip.

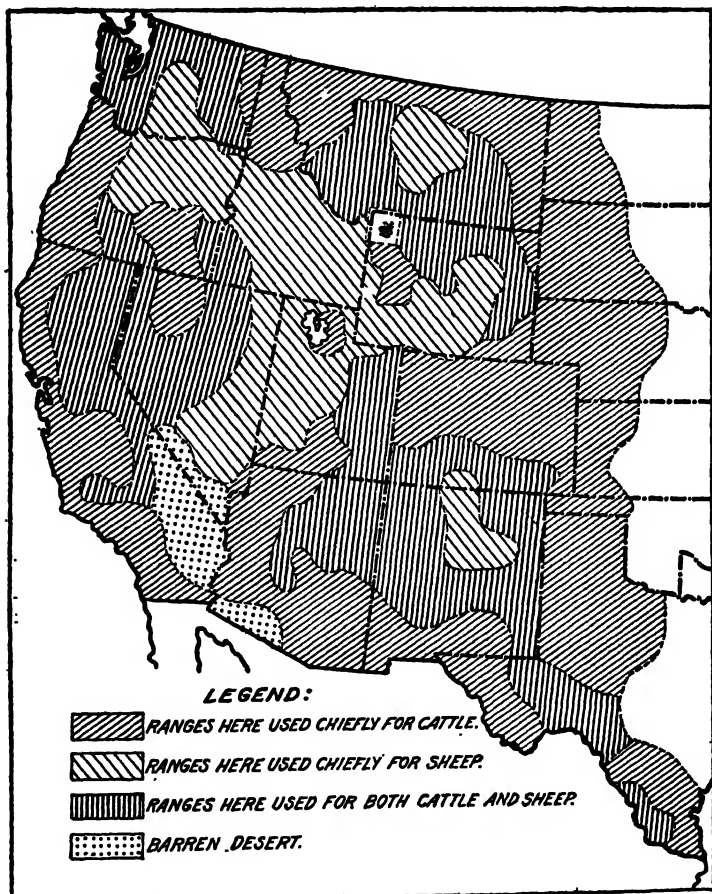
Owing to the shift from wool breeds to mutton breeds in many parts of the United States, the output of wool did not keep pace with the number of sheep on American farms and ranges. The maximum wool clip was produced in 1893, when 348,500,000 pounds were sheared as compared with 224,564,000 in 1921. In 1902-1903, when the Department of Agriculture reported the maximum number of sheep, the annual wool output aggregated 316,341,000 pounds, and since then it has

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<sup>1</sup> In the central Mississippi and Ohio valleys the leading breeds are the Shropshire, Oxford and Hampshire. In Kentucky and Tennessee there are many Southdowns.

<sup>2</sup> United States Tariff Board: *Wool and Manufacturers of Wool*, Vol. I, p. 300.

averaged less than 300,000,000 pounds. The decline in the last few years is due chiefly to the unusually large number of



From U. S. Department of Agriculture, Year Book, 1908, page 233 (Frank Andrews) Cost and Methods of Transporting Meat Annuals.

MAP XVI.—LOCATION OF RANGE COUNTRY.

sheep and lambs sold to packers and slaughterers and to a decline in the number of sheep in the United States as a whole.

**Imports of Foreign Wool.**—The wool trade differs from the grain, cotton and live-stock trades in that it is obliged to compete more actively for the domestic market against foreign producers. In contrast with the commodities previously considered, practically no domestic wool is exported from the United States. Indeed the country's wool manufacturing industries find it necessary annually to import from 50 to 65 per cent of their raw wool supply. The total production of American wool, the imports, and the consumption of wool in recent years are shown in table No. X (page 262).

Large quantities of foreign wool are purchased in Great Britain and some in Belgium and France, for these countries act as brokers in the wool trade, but most of the wool imported from abroad originates in Australia and New Zealand, Argentina and Uruguay, China, Russia and South Africa. Of 276,795,000 pounds imported in 1922, 173,036,000 consisted of low-grade wools, originating chiefly in China, East India, other Asiatic countries, the Scotch highlands and parts of South America where native sheep are raised. They are commonly referred to as carpet wools and are largely used in the carpet industry. Formerly wool of this type was also imported from Russia. Thirty-eight million, four hundred and two thousand pounds consisted of high-grade wools used largely in the worsted and carded woolen industries. They are known as "clothing" wools, and originated chiefly in the merino and merino crossbred flocks of Australia, New Zealand and Uruguay, Argentina and South Africa. The remainder of 155,101,000 pounds consisted of wool of the grade produced by the various types of English sheep or crossbreeds other than merino crosses. These imports of so-called "combing" wools, originated chiefly in these countries and in Great Britain. The total given above also includes over ten million pounds of animal hair.

The great wool-growing countries of the world are Australia and Argentine Republic, the annual output of the former aggregating over 700,000,000 and that of the latter nearly 400,000,000 pounds. New Zealand, Uruguay and South Africa, China,



India and Russia produce less than the United States but their output results in a surplus available for exportation.

**Competition Between Domestic and Foreign Wool.**—The extent of competition between domestic and imported wool is not so great as their relative volume would indicate. The largest

TABLE X

DOMESTIC OUTPUT, IMPORTS AND CONSUMPTION OF WOOL<sup>1</sup>  
(000 omitted)

Years	Domestic Output <sup>2</sup>	Imports <sup>3</sup>	Consumption <sup>3</sup>	Per Cent of Consumption Foreign
1881-1890 (av.) . .	280,700	93,195	369,486	24.1
1900 . . . . .	288,637	155,928	436,663	34.4
1910 . . . . .	321,363	263,928	581,236	44.7
1911 . . . . .	318,547	137,648	447,990	28.9
1912 . . . . .	304,043	193,401	495,724	38.8
1913 . . . . .	296,175	195,293	486,266	39.3
1921 . . . . .	273,064	318,236	580,128	53.9

<sup>1</sup> National Association of Wool Manufacturers, Annual Wool Review; Department of Commerce: Annual Commerce and Navigation Reports, and Statistical Abstract.

<sup>2</sup> Years ending April first.

<sup>3</sup> Years ending June thirtieth.

group of imports, the so-called carpet wools, competes with but small quantities of domestic wool. But 31 per cent of the total American slip grades as  $\frac{3}{8}$ -blood or less, and much of this is of a quality which does not bring it into direct competition with the low-grade carpet wools imported from China, Russia and India. Nearly 60 per cent of the country's wool output grades half-blood or higher,<sup>3</sup> and is used in the mills which also purchase imported combing and clothing wool. As relatively little domestic wool, however, competes with the highest grades of Australian wool, a portion of the "clothing" wool imported from that country may likewise be regarded as non-competitive.

Until December 1, 1913, moreover, when the wool was placed

<sup>3</sup> U. S. Tariff Board, *Wool and Manufacturers of Wool*, Vol. I, pp. 300—52 per cent above half-blood and 17 per cent half-blood.

upon the free list by the tariff act of October, 1913, the competition between domestic and foreign wool was modified by protective import duties. The import rates imposed on unscoured "carpet" wools by the acts of 1897 and 1909 ranged from 4 to 7 cents a pound according to whether their value was less or more than 12 cents a pound.<sup>4</sup> They were low because such wools are in the main not competitive. The rates on unscoured "clothing" wools, however, ranged from 11 to 22 cents per pound according to whether they were washed or unwashed, and those on unscoured "combing" wools were 12 cents. The rates on scoured "clothing" wools were 33 cents, "combing" wools 36 cents,<sup>5</sup> and "carpet" wools 21 cents per pound.

Wool was again placed on the dutiable list in the emergency tariff act of 1921, and in the tariff act of Sept. 21, 1922. Carpet wools may be imported under bond and when withdrawn within three years for actual use in the manufacture of carpets, rugs or other floor coverings the duties imposed in the act of 1922 are remitted or refunded. Otherwise carpet wools are subject to duties ranging from 12 to 24 cents per pound according as they are in the grease, washed or scoured, and 11 cents when imported on the skin. Other classes of wool are subject to a duty of 31 cents per pound of clean content when imported in the grease or washed; 31 cents in the scoured state; and 30 cents per pound of clean content when imported on the skin.

The ability to import foreign "clothing" and "combing" wools while these protective duties were in effect was due largely to the absolute shortage of domestic wools, and to differences in grade, use and shrinkage. The finest grades of Australian wool are not in direct competition with American wool, being used in the manufacture of the finest fabrics or to mix with

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<sup>4</sup> Duties here quoted were those on wool not on the skin.

<sup>5</sup> The rates on unscoured wool in other tariff acts since 1860 were as follows: 1861 and 1862—50 per cent, 3c and 9c; 1864—3c to 12c plus 10 per cent; 1867—3c to 12c plus 10 per cent, and washed Class I wools double; 1872—2 7/10c to 10 8/10c plus 9 per cent, and washed Class I wools double; 1875—3c to 12c plus 10 per cent, and washed Class I wools double; 1883—2½c, and washed Class I wools double; 1890—Class I—unwashed 11c, washed 22c, Class II, 12c, Class III 32 per cent to 50 per cent; 1894—free.

domestic wool of somewhat lower grade or different quality. Much foreign wool, however, is competitive, and was able to pay the high protective duties largely because the shrinkage of imported "clothing" and "combing" wools, i. e., the difference in weight between "raw" or "grease" wool and "clean" or "scoured" wool, is less than that of domestic wools. As compared with a shrinkage of 60 per cent and 67.3 per cent in the finer grades of wool produced respectively in the eastern and western parts of the United States, the Tariff Board reported an average shrinkage of 47.6 per cent and 48.2 per cent respectively in the finer grades of South American and Australian imported wools. The difference in the case of coarser South American and Australian wools is less pronounced but it is also a substantial factor in the wool trade. Since the tariff rates were usually constructed on the theory that wool shrinks 66⅔ per cent in the scouring it was to the interest of wool importers and foreign exporters to select wool of low shrinkage for the American market and to ship the heavier wools to Europe. Natural differences in shrinkage, moreover, were made larger by the practice of "skirting." While American wool usually reaches the market substantially as it comes from the sheep's back, in the case of foreign wools of like character imported under the protective tariff acts of 1883, 1890, 1897 and 1909, the stained or inferior locks were usually skirted or trimmed from the edges of the fleeces.

**Reasons for Extensive Imports of Wool.**—There are several reasons why, in spite of high tariff rates, the mills of the United States have had to import over one half of their raw wool supplies:

1. A fundamental cause has been the use of sheep lands in many parts of the United States for crops which are inherently more profitable. The movement of the wool-growing industry across the entire continent shows how as the frontier was pushed westward wool had to make way for more profitable crops. Everywhere east of the Rocky Mountains the lands which formerly produced much wool are now used mainly for wheat, corn, oats, hay, vegetables, fruits or other similar crops. It found its last main stronghold on the western foothills and mountains,

for there the development of agriculture has been less rapid and much land is unsuited to crops without irrigation.

2. Similar to the foregoing cause is the fact that in many of the sheep-growing regions of the United States, it has been found more profitable to produce mutton and lamb than to produce wool. As formerly mentioned the flocks of the Ohio and central Mississippi valleys have been largely converted into meat-producing flocks, and even in Wyoming and Montana there has been much crossing with English mutton breeds. The Tariff Board reported that receipts from wool in the western flocks taken as a whole averaged \$1.17 or 45.7 per cent of the total receipts per head, as compared with \$1.31 or 58.7 per cent in Australia and \$1.28 or 60.4 per cent in South America.<sup>6</sup>

3. The operating costs of production have gradually risen in the United States and are substantially higher than in the countries which produce wool of similar quality. The labor costs in the western states where sheep-raising conditions are the most favorable averaged about 82 cents per head as compared with 7 cents in Australia and 23 cents in South America when the Tariff Board made its cost investigations.<sup>7</sup> Forage costs averaged about 45, 8, and 35 cents per head respectively. As was stated by the Interstate Commerce Commission: "The free range was the basis of the sheep industry in this region, and the free range no longer exists. The better lands are being taken up by farmers. Much is coming under cultivation through irrigation projects. The sheep-man to-day must not only pay for the privilege of grazing, but he is deprived of his winter feeding grounds and must supply artificial food at great expense. In many places the water formerly available has become private property, and this necessitates great outlay upon the part of the ranchman. The serious condition which confronts the grower of sheep in this western country is the diminishing quantity and the continually increasing price of land in its

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<sup>6</sup> *Wools and Manufacturers of Wool*, Vol. I, p. 342.

<sup>7</sup> Cost figures as reported by Tariff Board, *Wool and Manufacturers of Wool*, Vol. I, pp. 333-377.

various forms; and this is not a temporary but a permanent condition."<sup>8</sup>

Miscellaneous costs, including administration, maintenance repairs and depreciation, taxation, shearing, wool bags, movement of flocks between winter and summer ranges, etc., averaged about 83 cents per head in the western states, 78 cents in Australia and 57 cents in South America. Total operating costs per head averaged about \$2.11, \$.93 and \$1.15 respectively in the three competing districts.

The total net charge against a pound of merino wool in the western states was estimated by the Tariff Board to be about 11 cents, in the remainder of the United States about 19 cents, and in the country as a whole 12 cents. These cost figures which were based upon the year 1909-1910 indicate that the average price of 24 cents for merino wool paid to growers in the Ohio Valley and 15.9 cents paid to western growers during that year left an average profit of but 3.1 cents per pound to the former and 4.9 or 5 cents to the latter. In later years prices have been higher, but as stated by the Tariff Board "there is no contingency in sight that can by any possibility place domestic growers on an equality in the matter of costs with their competitors in South America, Australia and the Cape Colonies."

**Distribution by Industries.**—The greatest quantity of wool is consumed in the worsted industry, large amounts in the carded woolen and carpet and rug industries, and smaller amounts in the felt goods, hosiery and knit goods and wool felt hat industries. The total consumption in the various industries in 1909 and 1899 are shown in Table No. XI.

In the census year 1909 all of the various branches of wool manufacturers consumed 559,500,000 pounds of raw wool. In addition much wool in the form of waste and noils<sup>9</sup> passes from the worsted to the carded woolen and other woolen industries; many woolen rags and much shoddy<sup>10</sup> is annually consumed; and there is some trading in tops<sup>11</sup> and in woolen and worsted

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<sup>8</sup> 23 I. C. C. Reports, 156.

<sup>9</sup> Short, tangled fibers separated from wool in combing process.

<sup>10</sup> Wool reclaimed from woolen rags.

<sup>11</sup> Continuous strands or ropes of combed wool.

yarns. In 1909 wool manufacturers also consumed over 39,000,000 pounds of animal hair, hair yarn and hair noils, and 384,500,000 pounds of cotton and cotton yarns.

The worsted mills, which are the chief purchasers of wool, are located principally in Massachusetts, Rhode Island, Penn-

TABLE XI:  
CONSUMPTION OF RAW WOOL<sup>1</sup> IN THE UNITED STATES

Industry	1909 Quantity	1899 Quantity	Per Cent. of Increase <sup>2</sup>
	lbs.	lbs.	
Worsted.....	387,717,415	179,977,936	115.42
Woolen.....	87,037,951	150,200,616	—42.05
Hosiery and knit goods.....	7,068,788	17,953,907	—60.63
Carpets and rugs.....	64,135,020	51,871,334	23.64
Felt goods.....	12,409,826	9,606,263	29.18
Wool felt hats.....	1,203,498	2,713,374	—55.65

<sup>1</sup> Thirteenth United States Census, Vol. X (1910), pp. 77, 106, 125.

<sup>2</sup> In the condition purchased in the United States.

<sup>3</sup> Minus (—) sign indicates decrease.

sylvania, New Jersey, New York and Connecticut, and more particularly in Lawrence, Providence and Philadelphia. New York, Pennsylvania and Massachusetts produce nearly 90 per cent of all the domestic carpets and rugs. The carded woolen hosiery and knit goods and felt goods mills are located mainly in the eastern half of the United States, but are more widely distributed.<sup>12</sup>

### CENTRAL WOOL MARKETS

Although some wool is purchased directly from the growers by the manufacturers and is shipped directly to the mills, the great bulk of raw wool is handled by central wool dealers or

<sup>12</sup> Hosiery and knit goods chiefly in New York, Pennsylvania, Massachusetts, Illinois, Connecticut, New Hampshire, and Rhode Island. Felt goods chiefly in New York, Massachusetts, New Jersey, Connecticut and Pennsylvania. Carded woolen goods chiefly in Massachusetts, Pennsylvania, Maine, Connecticut, New Hampshire, New York and Rhode Island.

commissionmen who concentrate it at a small number of large central markets. There are two chief groups of central markets east of the Rocky Mountains, those on the Atlantic seaboard and those of the central West.

**The Eastern Markets.**—The former, which are of predominant importance alike in the domestic and import trade, are located principally in Boston, New York and Philadelphia. Boston is the controlling wool market of the country; indeed that market has as much influence over wool prices as Chicago has over the prices of grain, possibly more. Equipped with huge warehouses and scouring plants, located adjacent to the greatest woolen textile district in America, favored by a location which enables it to import readily from abroad, and by railroad rates which until recently made it difficult for most of the central western markets to compete in the handling of wool grown on the mountain ranges, Boston has been able to quote regularly and publish daily prices which are largely followed everywhere throughout the United States. The wool receipts of Boston in 1912 aggregated 360,602,000 pounds, or 74 per cent of the entire wool consumption of the United States.

**Central Western Markets.**—There are few central wool markets in the West because the centers of consumption are so largely located in the East, and because Boston, New York and Philadelphia have as compared with most western cities been favored by relatively low through railroad rates. St. Louis and Chicago are wool centers because the through rates from the West “break” at those points; i. e., the through rates to the seaboard are made up of the rates from the local shipping points to these terminals plus the rates from there to the seaboard, thus giving St. Louis and Chicago wool dealers an opportunity to classify and grade, scour and otherwise handle western wool.<sup>13</sup> The wool receipts of Chicago in 1922 comprised 62,192,000 pounds, and shipments from Chicago which were higher because of the pulled wool obtained from the packers and slaughterers and the storage of fleece wool aggregated

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<sup>13</sup> 19 I. C. C. Reports 535, Dec. 14, 1910; 23 I. C. C. Reports 169, March 21, 1912.

68,119,000 pounds. Omaha has become a wool center because it has for some years enjoyed a transit privilege, i. e., the privilege of stopping western wool and subsequently reshipping it on the balance of the through rates.<sup>14</sup> Western dealers being located in important packing and slaughtering centers are, moreover, able to increase their supply by purchasing "pulled" wool<sup>15</sup> and their middlewestern location enables them to handle some of the wool grown in the Mississippi Valley. The Interstate Commerce Commission more recently ruled that transit privileges should be extended to other "intermediate points on a direct line upon payment of 2½ cents per 100 pounds and upon the condition that it applies only to wool originating west of the Mississippi River, which must be kept separate from wool originating at points east of the river."<sup>16</sup>

**Pacific Coast Markets.**—Wool grown on the Pacific Slope is largely concentrated at the coast terminals, particularly at San Francisco in the south and Portland in the north.<sup>17</sup> The coast terminals are central wool markets chiefly because by their location they are enabled to ship to the eastern markets either by water or rail. For some years they enjoyed a through blanket rate of \$1.00 per 100 pounds on baled wool shipped eastward by rail, as compared with typical rates on shipments from interior points to Boston, ranging as follows: from Spokane, Washington, \$2.13; The Dalles, Oregon, \$1.43; Boise, Idaho, \$2.13; Billings, Montana, \$1.75; Cheyenne, Wyoming and Denver, Colorado, \$1.72½; Ogden, Utah, \$1.72½; Albuquerque, New Mexico, \$1.93; and Fort Worth, Texas, \$1.84½. In 1912 and 1913 the rates from interior points to the eastern markets were reduced by the Interstate Commerce Commission, but they remained in excess of \$1.00 per 100 pounds. The rates on sacked wool shipped from Denver and Cheyenne to Boston for example were reduced from \$1.72½ to \$1.32 per 100 pounds, and proportionate reductions were made on

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<sup>14</sup> *Ibid.*

<sup>15</sup> Wool removed from skins after slaughter.

<sup>16</sup> 23 I. C. C. Reports 177.

<sup>17</sup> Also Los Angeles, Sacramento, Seattle, Tacoma, Everett, Astoria, etc.



shipments from other mountain and far-western interior points.<sup>18</sup> During the war the long-and-short-haul clause was applied and this practice has for the most part been continued in the transcontinental wool trade. San Francisco and Portland have lost the great advantage in railroad rates which they formerly had.

**Functions of Central Wool Markets.**—(1) The central markets are points of concentration where raw wool may be stored, classified and graded. (2) They are spot or cash markets in which the dealers and commissionmen sell wool to manufacturers as it is needed by them either for immediate delivery or delivery at a stated time in the future. (3) Although speculative “futures” are not dealt in as in the grain and cotton trades, there is speculation in wool at some of the central markets. (4) They are shipping and distributing points from which wool is distributed to the mills or to other wool markets. (5) They facilitate the quoting, publication and determination of wool prices. (6) Most of them, particularly the three great eastern markets, are scouring centers. While there are a small number of scouring plants in the wool-growing regions, most of the wool—domestic as well as foreign—arrives at the central markets as raw or grease wool, there to be scoured<sup>19</sup> either by the central wool dealers or manufacturers. (7) The Atlantic seaboard markets in addition are wool-importing centers; and (8) in all the largest markets, but particularly in Boston, New York and Philadelphia, much wool is consumed in locally established mills.

### THE LOCAL PURCHASING OF WOOL

**Purchase from American Growers.**—Wool is sold by the growers either in the “unwashed” condition just as it comes from the sheep’s back, or after it has been “washed.” In the latter case the sheep are driven into shallow streams or vats

<sup>18</sup> 23 I. C. C. Reports 151, March 21, 1912; 25 I. C. C. Reports 185, Nov., 1912; 25 I. C. C. Reports 675, Jan. 7, 1913.

<sup>19</sup> Scouring removes the wool fat, perspiration, dirt and foreign substances so as to prepare it for carding and combing.

and the wool is washed with water so as to remove some of the foreign substances and perspiration adhering to it. In either case the "wool fat" or "grease" is usually not removed until the wool has been sold and reaches the scouring plants of the central dealers or manufacturers.

It is usually shipped from the western ranges in sacks about 7 feet long, 3 feet in diameter and weighing from 250 to 350 pounds, each fleece being tied up with a string and trodden into the sack. Some wool is baled before it is shipped to distant points. Three bales may be tied together and compressed, or the wool may be taken from the sacks and compressed into square or rectangular bales fastened with iron straps. Baling is done mainly by the dealers rather than the growers, and thus far the practice has not become general in the United States. The Interstate Commerce Commission, however, has ordered a difference of 15 per cent in favor of wool shipped from western points in bales having a density of at least 19 pounds per cubic foot.<sup>20</sup>

Although the wool trade is similar to the grain, cotton and live-stock trades in that much of the output is concentrated at central markets, it differs in that the principal central wool markets are not in the interior but on the seaboard, from two to over three thousand miles distant from the western ranges. The methods of purchasing the wool from the growers are various.

(1) The most common method throughout the mountain districts is the direct purchase by central wool dealers. (a) The growers may receive bids from these dealers by mail or telegraph and in that way make a private sale. (b) They may be visited by buyers sent out by the dealers to make bids and buy their wool privately. (c) They may sell their clip to the buyers of the dealers at public sale on the local wool exchanges which have been established at some of the local wool shipping points. These local exchanges are spot markets with warehouses where growers may bring their wool, list it free of charge, and receive bids on it at given times from the various buyers who congre-

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<sup>20</sup> 23 I. C. C. Reports 166, 176.

gate there. At some points the buyers who organize the local exchanges offer free warehousing as an inducement to the growers.

The dealers may buy the wool either before or after it has been shorn. During some seasons much wool is contracted for on the sheep's back,<sup>21</sup> although many growers are opposed to this practice.<sup>22</sup>

(2) Wool is also consigned by growers to central commissionmen. Some wool-buying houses may act as dealers and also receive wool on consignment. Commissionmen sell the wool to manufacturers or dealers, the growers paying a commission for their services, the railroad and drayage charges, storage in case the wool is stored in warehouses, and insurance until the wool is disposed of.

(3) Manufacturers sometimes buy direct from the western growers, in any of the ways mentioned in connection with wool dealers. This practice has, however, never become common because there may be numerous grades in the wool clip as offered by the growers. Since the manufacturer desires particular grades it has been to his interest to buy from central dealers and commissionmen who after sorting, classifying and grading can provide the grades which he wishes to use.

(4) As in case of the live-stock trade the wool produced in regions where sheep raising is not conducted on a large scale is frequently bought by local dealers. These local dealers may buy on their own account with a view to selling directly to central dealers or manufacturers, or consigning it to central commissionmen; or they may act as commission agents or buyers for central dealers or manufacturers, receiving from 1 to 2 cents per pound of wool shipped by them.

(5) Many growers have undertaken to handle their wool coöperatively either at the central markets or locally. In 1909-1910 some five hundred western growers have established a coöperative terminal wool warehouse at Chicago in order to

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<sup>21</sup> National Association of Wool Manufacturers, *The Annual Wool Review* (1912), p. 308.

<sup>22</sup> *Ibid.*, (1912), p. 307.

handle their wool in the same way that wool is handled by commissionmen and dealers in the East, so as to retain the middleman's profit, discourage the sale of wool on the sheep's back, store their wool until sold, and obtain loans from banks up to two-thirds of its value.<sup>23</sup> Some of the shipping associations or lamb clubs mentioned in connection with the sale of livestock (page 227), moreover, constituted local wool-shipping associations the members of which shipped or sold their wool as well as their sheep coöperatively. Later, especially after the collapse of wool prices in 1920, many additional coöperative wool associations were organized to pool, grade and sell direct to eastern dealers and mills.<sup>24</sup>

**The Purchase of Imported Wool.**—Most of the wool imported into the United States is purchased in foreign wool markets by agents or buyers of American wool dealers and manufacturers either on public markets or privately. (1) Much wool is bought by American buyers at auction in the public "wool sales" of London, Antwerp, and other European wool centers. At London, for example, Australian, New Zealand, South African and other wools are catalogued, exposed in warehouses for examination and auctioned in the public salesroom on Coleman Street. (2) Similar public auction sales have been established in various interior and seaboard wool markets in Australia and New Zealand, American buyers appearing particularly at Melbourne and Gellong. Their purchases, however, are less important than those made in London, much of the Australasian wool being imported indirectly. The tendency in recent years to import wool direct from Australia should gradually enhance the importance of these auction sales in the wool import trade of the United States. (3) Much foreign wool is purchased privately from foreign dealers and commissionmen, particularly in South America and in the countries which produce carpet and other coarser wools, but to some extent also in the British, European and Australasian markets where public wool sales have been

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<sup>23</sup> 23 I. C. C. Reports 172; National Association of Wool Manufacturers, 23 *Annual Wool Manufacturers*, 23 *Annual Wool Review*, (1909), p. 522, *Ibid.*, (1910), p. 307.

<sup>24</sup> Joint Commission of Agricultural Inquiry, Part III, p. 124.

established. (4) Some foreign wool is purchased directly by private sale from foreign growers at the ranches or at the wool centers of the countries in which it is grown.

### WOOL PRICES

It is at the large central markets of the East, particularly at Boston, where the prices paid for American wool are determined, for it is there that both domestic and foreign wool is concentrated. The *market supply* of wool differs from that of any of the agricultural commodities previously discussed in that it is more largely influenced by foreign production. The imported wool, being purchased abroad in competition with the buyers of many other countries, cannot be bought at prices warranted by the domestic wool output, and consequently the prices of American wool are influenced largely by the foreign as well as the available domestic supply.

The influence of *market demand* is likewise international, for although European mills do not use American wool they are in the market for huge quantities of Australian, New Zealand, South American and South African wool of the grades which compete with American wool in the markets of the United States. The influence of demand and supply upon the price of American wool has for many years differed from the influence of these factors upon American grain, cotton and live-stock prices in that domestic wools were protected by high *import duties*. Other domestic farm staples were also protected, but since there was until recently little occasion in their case to import competitive commodities from abroad their prices were not greatly affected by the import duties imposed. American wool prices were, however, not maintained by the full amount of the duties paid on foreign wool because all imported wools are by no means competitive and there are other forces which act independently of the tariff.

The prices of American wool are to some extent influenced by the various *costs of production* previously mentioned, but the international character of the wool trade minimizes their effect,

for the lower producing costs of competing Australian, New Zealand, South American and South African wool are also instrumental. *Shipping and selling costs* influence the relative prices at the various markets somewhat, but being deducted from the growers' prices for the most part, they are particularly important to the producer. Railroad charges of from \$1 to \$2 per 100 pounds of wool shipped from the western states constituted but a small percentage of territory wool<sup>25</sup> prices which on May 9, 1914, ranged from 50 to 60 cents per pound (scoured basis) in the Boston market, but freight rates on western wool have since then been advanced to such an extent that they range from 10 to 25 per cent of the price received by the grower.

Differences in *quality and condition* largely affect the prices paid at the central markets for the various types of American wool. Thus the prices vary according to whether the wool is sold in the unwashed, washed or scoured condition. When Ohio unwashed half-bloods, for example, sell for 24 and 24½ cents per pound the same grade of Ohio washed wool sells for 26 and 26½ cents, and the Montana staple half-bloods which are sold in the Boston market on the scoured basis sell at 53 cents and 54 cents. The quality of the wool depends largely upon the percentage of merino blood in the sheep, the geographical region in which the wool is produced, its 'scouring percentage, the frequency of shearing, i.e., whether 12 or 8 or 6 months' growth, and the absence or presence of any special defects.

In comparison with the prices of the grains or those of cotton, live stock or most other farm products, the prices of American wool at the central markets are noticeably stable. Boston prices for various grades are plotted in diagram No. IX. While abrupt changes from one price level to a higher or lower level occur when wide changes in the relation between supply and demand or other price factors occur, once the new adjustment has been made central market wool prices are frequently maintained for many months with but slight week-to-week fluctuations. The seasonal marketings of wool are usually absorbed by central market dealers for storage and subsequent distribution to mills.

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<sup>25</sup> Wool grown in Montana, Wyoming and Idaho.

In the West where most of the wool is bought directly by dealers and manufacturers, or consigned to central commission-

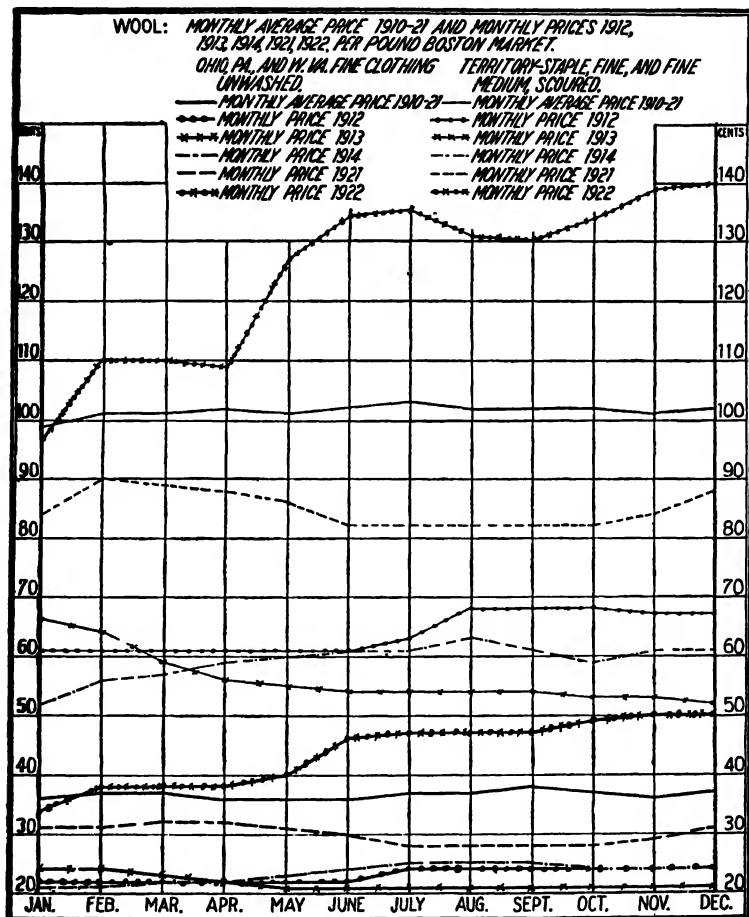


DIAGRAM IX.—AVERAGE MONTHLY PRICES OF WOOL AT BOSTON.

men, the prices paid to the growers are based upon the current prices paid at the central markets. The buyers deduct from the latter the estimated shrinkage of the wool, railroad charges,

packing costs, baling costs if any, drayage, and other handling and buying costs. The growers of the northwestern and southwestern ranges, for some years, received from 2 to 4 cents less per pound than the ruling price of the Boston wool market, and this difference has in recent years advanced to 7 or 8 cents. If consigned to a central commissionman the commission charge and insurance costs, if any, are also deducted from the growers' balance.

In the Ohio and Mississippi valleys where much wool is purchased by local dealers or local commissionmen, and where most growers produce wool merely as a side line, the difference between the growers' and eastern market prices sometimes is wider than in the northwestern and southwestern wool districts because the local middleman's profit as well as the usual costs are deducted. Here, moreover, little attention is given to grade and condition by local buyers, who often pay a uniform price at any particular time and not infrequently base this price upon the less desirable offerings.<sup>26</sup>

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*See also* references on trade in live stock, pp. 255 to 257.

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<sup>26</sup> U. S. Tariff Board, Vol. I, pp. 560, 590.



## CHAPTER XII

### THE LEAF TOBACCO TRADE

Another of the great American agricultural staples, the annual value of which exceeds that of the country's wool clip, is leaf tobacco. Since 1909 the crop has ranged from nine hundred thousand to one and one-half billion pounds, valued at from \$85,000,000 to \$570,000,000. India, Russia, Hungary, Java, Japan, Cuba, Germany, Turkey and other countries produce much leaf tobacco, but none grow one-half the crop annually grown in the United States, and none export one-half the quantity annually exported from this country. Leaf tobacco is important both in domestic and foreign commerce, and the trade methods pursued are in many respects distinctive.

### LEAF TOBACCO DISTRICTS AND TYPES

As in the case of cotton, leaf tobacco is confined to certain districts within which it constitutes the staple agricultural crop. Similarly, from the botanical standpoint many varieties are grown. Commercially, however, leaf tobacco is classified in greater detail than any of the agricultural staples previously discussed because the finished tobacco products made out of the leaf tobacco vary widely and require distinctive qualities in their raw material.

**Commercial Classes and Types.**—The tobacco trade generally recognizes two chief *classes* of leaf tobacco: (1) cigar tobacco and (2) chewing, smoking, cigarette, snuff and export tobacco. These classes which are based upon the adaptation of the leaf tobacco for certain uses are sometimes subdivided more fully, each of the groups comprising the second class being regarded as a separate class; but there is so much over-lapping in the use

of leaf tobacco for the making of chewing, smoking, cigarette and snuff tobacco and for exportation that the twofold classification is more generally accepted.

TABLE XII

TYPES, DISTRICTS, OUTPUT AND PRICES OF LEAF TOBACCO  
(U. S. Department of Agriculture Classification)

Types and Districts	Production in Pounds (000 omitted)			Grower's Prices per Lb. on Dec. 1 (cts.) <sup>1</sup>	
	1899 <sup>2</sup>	1913 <sup>2</sup>	1922 <sup>2</sup>	1913	1922
<b>I. CIGAR TYPE:</b>					
New England.....	23,778	38,295	46,925	21.0	27.8
New York.....	13,958	4,386	2,200	12.2	7.0
Pennsylvania.....	41,503	48,680	56,760	7.5	16.0
Ohio—Miami Valley	48,652	37,449	31,090	11.0	15.0
Wisconsin.....	45,500	50,740	45,600	12.0	20.0
Georgia and Florida	1,711	5,800	.....	31.0	50.0
Texas.....	550	.....	.....	....	....
<b>II. CHEWING, SMOKING, SNUFF AND EXPORT TYPES:</b>					
Burley District.....	158,143	176,776	270,710	12.3	25.0
Dark Districts of Ken- tucky and Ten- nessee:					
Paducah district..	51,538	58,500	73,805	7.7	13.2
Henderson or stem- ming district...	88,134	44,000	72,000	7.3	15.0
Upper Green River district.....	6,700	16,848	50,447	7.0	13.0
Upper Cumberland district.....	3,862	11,400		7.3	
Clarksville & Hop- kinsville district.	75,803	80,500	106,140	9.0	17.3
Virginia sun-cured district.....	8,354	12,500	6,975	8.5	18.5
Virginia dark district	61,742	58,384	43,195	7.0	19.0
Bright yellow district:					
Old Belt—Virginia and North Caro- lina.....	108,450	165,600	240,681	18.5	29.0
New Belt—North Carolina and South Carolina..	83,762	117,150	232,649	17.9	25.6
Maryland and East- ern Ohio Export..	27,224	20,976	29,200	9.1	19.0
Perique—Louisiana..	102	270	10,613	25.0	21.6
Scattering.....	18,647	7,260		....	
<b>Total.....</b>	<b>868,113</b>	<b>953,734</b>	<b>1,324,840</b>	<b>12.8</b>	<b>23.1</b>

U. S. Census returns.

U. S. Department of Agriculture Estimates.

Leaf tobacco classes are in turn made up of types based upon the possession of certain qualities such as color, strength, elas-

ticity, body and flavor, or upon the method of curing such as sun-cured, air-cured, flue-cured or cured by open fires.<sup>1</sup> The standard grouping of leaf tobacco into classes and types, and the quantity of each class and type produced in recent years is shown in Table No. XII (page 279).

Leaf tobacco types are further divided into a large and varying number of grades, which are based upon different degrees of excellence in quality. Burley tobacco, for example, is commonly assorted by the growers into six grades,<sup>2</sup> and yellow tobacco into from six to fifteen.<sup>3</sup> When repacked, resorted and rehandled by dealers, packers or manufacturers the number of grades may be further increased so as to disclose in detail any differences in quality which the leaf tobacco of any given type may possess.

**Leaf Tobacco Districts.**—As shown in Table No. XII the cigar leaf types are grown principally in certain districts of Pennsylvania, Wisconsin, New England, Ohio, New York, Georgia and Florida. The great bulk of cigar leaf is grown in the northern states. Eleven counties of Pennsylvania, particularly Lancaster County, which usually produces more tobacco than any other county in the country, grow leaf tobacco which is used largely for cigar fillers, although a small per cent is used for cigar wrappers and binders.<sup>4</sup> Fourteen counties in southern and western Wisconsin grow leaf tobacco which is used mainly for cigar binders, and fillers, Wisconsin being known as the binder state because 75 per cent of its crop is used for that purpose. Eleven New England counties, particularly those of the Connecticut and Housatonic valleys, produce cigar wrappers, binders and fillers. A larger share of the New England leaf is used for wrappers and for that reason its value is usually higher than that of the tobacco grown in other northern states. The tobacco grown in

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<sup>1</sup> J. B. Killebrew and H. Myrick, *Tobacco Leaf*, p. 46.

<sup>2</sup> Flyings of sand leaves or so-called "spod," trash, lugs, bright leaf, red leaf and tips.

<sup>3</sup> Danville, Va., grade are: A Wrapper, (1) common, (2) medium, (3) good, (4) fine, (5) fancy; B Fillers, (1) common, (2) medium, (3) good, (4) fine; C Smokers, (1) common, (2) medium, (3) good, (4) fine; D Cutters, (1) common, (2) medium, (3) good, and (4) fine.

<sup>4</sup> See J. P. Killebrew, *Tobacco Districts and Types*, in *Circular 18* of Bureau of Statistics, Department of Agriculture.

fourteen counties of the Miami Valley in Ohio as in the case of Pennsylvania is used mainly for cigar fillers. That grown in the eight counties which comprise the Onondago and Big Flats tobacco districts of New York is similar to the New England crop but is of somewhat inferior average quality and less of it is used for cigar wrappers. The highest type of domestic cigar tobacco is grown in the five tobacco counties of Georgia and Florida, it being used largely for cigar wrappers.

Of far greater importance than the cigar leaf districts are the large districts in Kentucky, Virginia, North Carolina, Tennessee, South Carolina, Maryland, West Virginia and southern Ohio which produce the chewing, smoking, snuff, cigarette and export types. Their value per pound is on the whole less than that of the cigar types, but their total quantity and value are far in excess. Indeed Kentucky alone produces one-third of the country's entire leaf tobacco crop.

The *burley district* extends throughout the central and eastern parts of Kentucky and certain counties in Ohio, Indiana and West Virginia. It produces the so-called "burley" leaf, much of which is used in the United States to manufacture chewing and smoking tobacco and cigarettes and some of which is also exported to foreign markets.

The principal *dark districts* of Kentucky and Tennessee which produce the various types of "dark" leaf are five in number. The leaf grown in the Paducah district of western Kentucky and Tennessee, instead of being air-cured as in the burley and cigar leaf districts, is cured by the open-fire process. It is largely exported to foreign countries, although some of it is retained for the manufacture of snuff and cheap cigars, chewing and smoking tobacco. To the west and northwest from this district in Kentucky and Indiana is the Henderson district, also called the "stemming" district because most of its crop is exported to Great Britain in the form of "strips" which consist of the leaves after the stem or midrib has been taken out or "stemmed." The crop is cured either by the air-curing or open-fire processes and nearly all of it is shipped abroad. The better grades of dark tobacco grown in the upper Green River and

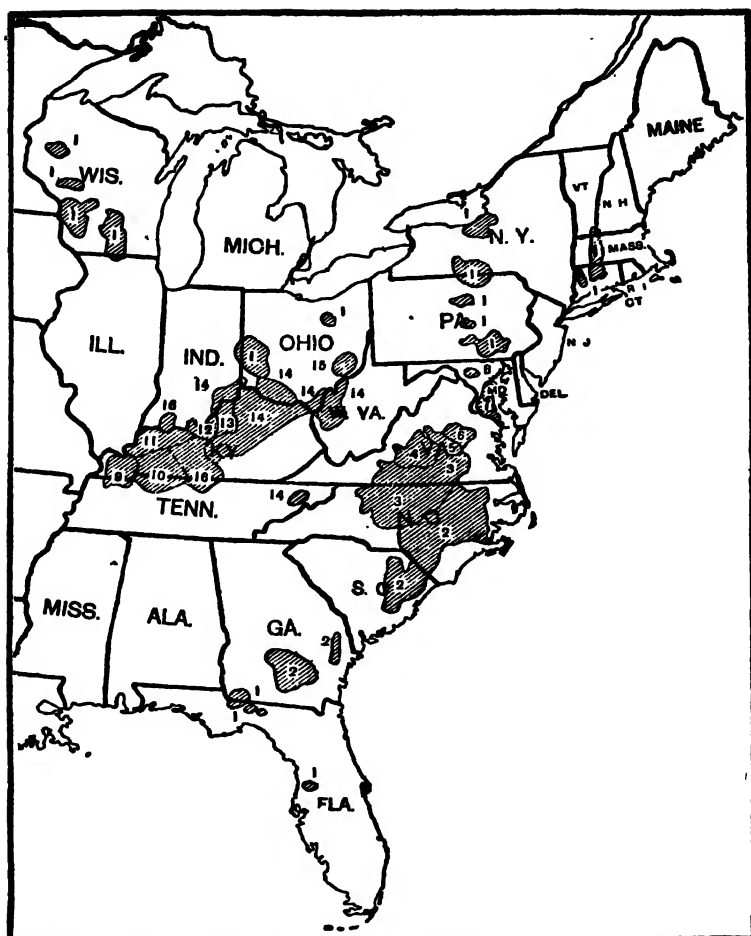
Upper Cumberland districts of Kentucky, where the air-curing process prevails, are used for chewing tobacco, and the lower grades for smoking tobacco and for exportation. The output of the Clarksville and Hopkinsville district of Tennessee which is cured by the open-fire process, is prepared mainly for the export market, and as in the case of the Paducah district much is shipped to Great Britain in the form of strips.

The crop of the "*sun-cured*" district of northern and central Virginia which is partly cured in the sun and partly air-cured, is used largely in the United States in the manufacture of chewing and smoking tobacco. That of the *dark district of Virginia*, located in the southern part of the state, on the contrary is cured with open wood fires, and most of it is exported. Smaller quantities are used in the United States to make cheap cigars, snuff, smoking tobacco, plug fillers, and some of highest grades for plug wrappers.

The *bright yellow district* divides itself into two belts. The "Old Belt" which includes various counties in the southern part of Virginia and the northern part of North Carolina, cures its crop by the flue-curing process. Some of it is exported but most of it is retained for the manufacture of chewing and smoking tobacco. The crop of the "New Belt," which is located in the eastern and southern part of North Carolina and the northern part of South Carolina, is also cured by flue-curing process, but in this district the leaves are "primed," i. e., gradually cut from the stalk in the field as they ripen. Some of the bright yellow tobacco of this belt is exported, but most of it is used in the domestic manufacture of cigarettes and smoking tobacco.

In certain counties extending through Maryland, West Virginia, and eastern Ohio the so-called "*export tobacco*" is produced. This is a very "heavy shipping" tobacco which is cured either by the air-cured or open-fire methods, and most of it is exported to France, Holland and Germany. Small quantities are retained for cheap domestic cigars and smoking tobacco.

The total crop of *perique* tobacco is but small and has in recent years declined, nearly all of it being grown in St. James Parish, Louisiana. It is of a high quality, however, bringing



Prepared by U. S. Bureau of the Census, Bul. 146 (1921).

# MAP XVII.—LOCALITIES PRODUCING THE SEVERAL TYPES OF LEAF TOBACCO.

## EXPLANATION OF SHADING.

- |   |  |
|---|--|
| 1. Cigar leaf tobacco.                    | 10. Clarksville and Hopkinsville district.   |
| 2. New belt bright or flue-cured.         | 11. Stemming tobacco district.   |
| 3. Old belt bright or flue-cured.         | 12. Green River district.  |
| 4. Dark open-fire-cured shipping tobacco. | 13. Scattered burley.  |
| 5. Black or olive stemming.               | 14. Burley tobacco.  |
| 6. Sun and air cured manufacturing.       | 15. Eastern Ohio export (spangled tobacco) burley.                                 |
| 7. Maryland tobacco.                      | 16. Southern Kentucky and Upper Cumberland and Southern Indiana (one-sucker type). |
| 8. Upper county or bay.                   |  |
| 9. Paducah district.                      |  |

prices as high as those paid for the cigar tobacco grown in Georgia and Florida, and is known for its distinctive qualities. After being air-cured, the leaves are stemmed, made into loose twists, packed into boxes and subjected to pressure. The twists are unrolled to permit absorption of juices, retwisted and recompressed several times until finally cured. Formerly it was sold in rolls or "carrots" wrapped in cotton cloth and wound with rope and weighing from one to four pounds. Perique carrots were long regarded as a form of currency accepted by local merchants in exchange for goods and in payment of debts.<sup>5</sup>

A somewhat more detailed classification is given in Map No. XVII which was prepared by the United States Census Bureau.

#### METHODS OF SELLING LEAF TOBACCO IN THE UNITED STATES

The methods of selling the crops of the cigar leaf districts differ from those prevailing throughout the southern states where the heavier types are mainly grown.

**Sale of Cigar Types.**—There are no organized markets for cigar leaf tobacco, which is mainly grown in the northern states. Nearly all of it is sold by private sale to packers, dealers or cigar manufacturers.

1. The most common method is to sell privately to so-called "packers," whose agents sometimes purchase a grower's crop in the field before it is harvested but more frequently make bids at the tobacco barns. After the tobacco is cured the growers strip the leaves from the stalks, sort them into grades of quality, tie them in bundles of about forty pounds each, wrap them in heavy paper and deliver them to the packer's local warehouse or ship them to his headquarters which may be in New York, Chicago or other cities. The packer's services are various; (a) he acts as a local dealer who buys leaf tobacco from the growers; (b) he regrades, ferments and packs it into cases of from 300 to 350 pounds each; (c) he carries stock for many of the small local cigar manufacturers operating in the cigar leaf districts; (d) he sometimes sells to local manufacturers on credit, thereby

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<sup>5</sup> Killebrew and Myrick, *Tobacco Leaf*, p. 376.

acting as a banker, and (e) he sells much tobacco by sample to the wholesale dealers or jobbers and cigar manufacturers located throughout the United States.

2. Cigar leaf is sometimes sold privately by the growers direct to manufacturers. The American Cigar Company, for example, has leaf-buying stations at Hartford and Windsor, Connecticut; Fulton, New York; Dayton, Ohio; Lancaster, Pennsylvania; and Brodhead, Deerfield, Edgerton, Jonesville, Madison, Sparta, Stoughton, Viroqua and Watertown, Wisconsin; and has plants at various places for the rehandling, packing and storage of cigar leaf tobacco.<sup>6</sup>

3. Some cigar leaf is sold privately by the growers to the wholesale dealers or jobbers who may act as packers as well as jobbers. The jobber's supply of cigar leaf, however, is mainly obtained from the packing concerns.

4. Because of its nearness to the dark, burley and export leaf districts, a portion of the cigar leaf of the Miami Valley in Ohio is sold publicly on the auction market at Cincinnati, but this is an exception to the usual methods of selling the cigar types.

5. Coöperative marketing of leaf tobacco is practiced to some extent in every tobacco growing district.<sup>7</sup>

The system of middlemen is expensive, the original market value of the cigar leaf being advanced from 40 to 80 per cent by the time the crop reaches the manufacturers. It prevails largely because, in contrast with other branches of tobacco manufacturing, cigars are made by hundreds of small cigar makers who have insufficient capital to purchase direct from the farmers, send agents to organized markets, or do their own grading, fermenting, packing and storing. The growers are, however, not without redress as regards the prices which they receive. The very absence of control over the cigar-manufacturing industry by a few large concerns has assured a certain degree of competition between cigar leaf buyers. The system of local cigar manufacture in small factories and households such as prevails

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<sup>6</sup> U. S. Bureau of Corporations, *The Tobacco Industry*, Part I, p. 297.

<sup>7</sup> U. S. Department of Agriculture, *Year Book*, 1922, p. 433.



in the Pennsylvania district, moreover, enables the grower in case of low prices to undertake the making of cigars on his own account or for a local manufacturer. Growers may also if necessary pack their crop for storage or for shipment to markets located at a distance. Their main difficulty lies in the absence of definite knowledge as to current prices for cigar leaf, neither the buyers nor the individual growers being inclined to disclose the real price for which the crop changed hands.

**Sale of Smoking, Chewing, Snuff and Export Leaf.**—1. In most of the southern tobacco districts a large part of the leaf tobacco crop is sold at auction in public tobacco warehouses. In contrast with the northern leaf tobacco districts, these public warehouses located at large markets such as Louisville, Cincinnati, Clarksville, Hopkinsville, Richmond, Danville and Baltimore and at numerous smaller towns in the growing districts constitute an organized leaf tobacco market.

The auction sales are conducted in two general ways: (a) by the "loose-floor" method, and (b) by the "prized" or "inspected leaf" method. The former is particularly important in the Virginia sun-cured, Virginia dark, and bright yellow districts, although it has also been established to some extent in the Clarksville and Hopkinsville and Paducah dark districts, and in the burley tobacco districts. Auction sales of prized or inspected leaf tobacco prevail more largely in the large general tobacco markets at Louisville, Cincinnati and Baltimore where many types of leaf are sold, and in the Paducah, Henderson, Upper Green River and Upper Cumberland dark districts, the burley districts and the Maryland and East Ohio export district, the latter shipping most of its prized tobacco for sale in Baltimore warehouses. Some prized tobacco is also sold at auction in Virginia and the Carolinas.

Under the loose-floor method, the growers, after curing the leaves, stripping them from the stalk and tying them into small bundles containing from five to twenty leaves—the size of the bundles differing in the various districts—or placing them in sheets without tying them as is sometimes done in the "New Belt" of the bright yellow district, haul them to the

nearest auction warehouse. The warehouses are equipped with sufficient floor space and light to permit of the ready examination of the tobacco leaves, when placed in long piles on the floor, by the various buyers who congregate there. Meanwhile in moving the tobacco from the farmer's wagons to the assigned floor space it is weighed and tagged with cards showing the warehouse number, weight of pile and name of the owner. It is then "auctioned off" to the highest bidder by a tobacco auctioneer, the owner, however, reserving the option of rejecting the bids and selling his crop privately or at a subsequent auction. The usual warehouse costs are a weighing charge of 10 to 15 cents per pile, an auction fee of 10 to 15 cents per 100 pounds, or a set fee of 25 cents in case the pile exceeds 100 pounds in weight, and a commission of  $2\frac{1}{2}$  per cent on the proceeds of the sale for the general service of the warehouseman.<sup>8</sup>

Under the prized or inspected leaf method, the tobacco is delivered to the warehouse by the grower in hogsheads holding—variously in different districts—from 500 to 1,800 pounds, or, as is sometimes done in the bright yellow districts, in so-called "tierces" holding from 250 to 600 pounds. When so packed in hogsheads or tierces the tobacco is said to be "prized." Its sale at public auction is subjected to control by the states and by boards of trade or tobacco exchanges, so as to insure fair dealings between buyers and sellers. As is stated by Messrs. Killebrew and Myrick in their standard work on Leaf Tobacco:

It is the purpose of the law that these regulations will so cover every case as to make it unnecessary to carry disageements to the courts. Provision is made that no warehouseman, or any one of his employees, is allowed to participate in the profits or losses from the purchase or sale of any tobacco in the warehouse with which he may be connected. The inspectors of tobacco are either appointed by some State authority, or elected by a tobacco board of trade. In Tennessee, the warehousemen are created inspectors by law, but they may appoint inspectors, or samplers, for whose acts the warehousemen are held responsible by the regulations of the tobacco board of trade. These deputy inspectors are elected by the vote of the warehousemen and buyers, who have an equal

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<sup>8</sup> Killebrew and Myrick, *Tobacco Leaf*, pp. 274, 275.

voice in their selection. In cases where differences and claims arise, these are settled by an arbitration committee. The latter consists usually of three persons, who are appointed by a committee of the board of trade, one member of which is a warehouseman and another a buyer, these two selecting a third to complete this committee. Provision is also made for a committee of appeal, which has the power to confirm or reject the decision of the committee of arbitration. The warehouseman is obliged to keep his house in good condition and repair, the floors fitted with platforms, or skids, which will elevate the hogsheads at least four inches.

Provision is also made for the penalizing and detection of false packing, the bonding of inspectors, and a lien on the tobacco to cover warehouse charges and fees.

The auction sales of prized tobacco are based upon samples which are drawn by official inspectors, the hogsheads or tierce being opened, inverted and then lifted from the tobacco. To obtain the samples the solid column of leaves which is thus exposed is divided at various places each of which is known as a "break," and for this reason the auction sales are commonly referred to as tobacco "breaks." To the samples are attached and sealed labels or tags showing the name of the warehouse and its number, the name of the seller and inspector, the gross weight, date of inspection, and in case of reinspection also the date of reinspection and newly ascertained gross weight. The warehouse proprietor also issues a tobacco "note" or manifest bearing the date of inspection or reinspection, old and new weights, name of warehouse, and grower's marks or numbers. This "note" is a negotiable receipt which changes hands whenever the tobacco is sold and requires delivery when finally presented for shipment. Should the owner desire to store his crop for sale at some future time a special storage receipt is issued by the warehouseman.

Samples are auctioned off to the highest bidder, the bids usually being taken at advances of 10 cents per 100 pounds up to \$6, after which 25 cents is the minimum advance up to \$25, and then 50 cents per one hundred pounds. The growers, as in the case of loose-floor sales, may reserve the option of rejecting any

bid offered. Frequently as many as five hundred sales are made in a morning, all of which must be cashed within a specified time. The grower receives his pay at the warehouse office at the price accepted less warehouse charges, which usually vary from 20 cents to \$2.00 according to the quantity sold, inspection and sampling fees ranging from 40 cents to one dollar per hoghead (including cooperage and nails), auction fees ranging from 12½ cents to 25 cents per sample sold, a commissionman's fee of 2½ or 3 per cent, and varying storage and insurance charges if stored for a longer time than say four months. If shipped to the warehouse by rail the railroad charges are also deducted from the balance remitted to the grower.

2. Leaf tobacco in the southern tobacco districts is also sold in various ways by private sale. (a) Many growers sell the loose leaves as stripped from the stalks at their barns, for delivery to buyers' prizing houses. (b) They sometimes sell loose leaf tobacco privately at the public warehouses. (c) They may sell prized tobacco at their barns, or (d) privately at the public warehouses, and (e) some leaf tobacco, also, particularly in the Clarksville and Hopkinsville districts, is prized for the farmers by hired prizers, and is stored in private warehouses, to be finally sold by private salesmen on the basis of samples.

3. Plans similar to those mentioned in connection with cotton are under way in the southern tobacco districts for the coöperative sale of tobacco. Indeed more than forty tobacco associations have been in operation in Kentucky, Ohio, North Carolina and Virginia for a number of years.<sup>9</sup>

**Southern Leaf Tobacco Markets.**—The markets in which the southern growers sell their leaf tobacco crops and in which much leaf tobacco is also resold by dealers and other middlemen are too numerous for complete enumeration. Many of them serve but small parts of a tobacco district, but nevertheless are of importance alike to growers and buyers. Among the largest markets, however, are Louisville, Henderson, Paducah, Owens-

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<sup>9</sup> U. S. Department of Agriculture, *Bulletin No. 547*, (1917), pp. 35, 36; *Year Book*, 1922, pp. 439-442.

## AGRICULTURAL COMMERCE

boro, Hopkinsville, Lexington and Mayfield in Kentucky; Cincinnati, Ohio; Clarksville, Springfield, Nashville, and Paris in Tennessee; St. Louis, Missouri; Richmond, Danville, Petersburg, Lynchburg and Farmville in Virginia; Durham, Winston-Salem, Wilson, Rocky Mount and Oxford in North Carolina; and Baltimore, Maryland.

**Southern Leaf Buyers.**—Owing to the large degree of consolidation in those branches of tobacco manufacturing which consume the various heavy types of leaf grown in the South, the number of buyers bidding for crops is smaller than it was in the eighties and early nineties. Various groups of buyers, however, congregate regularly at the southern markets.

Many of the buyers represent manufacturers of chewing, smoking, snuff, cigarette, stogie, and cheap cigars. The large manufacturing concerns, particularly, maintain special leaf-purchasing departments with headquarters at the leading markets and branches and buyers throughout the surrounding districts. Some of the buyers represent dealers who prize, regrade, rehandle, resell and ship tobacco to manufacturers and exporters, or specialize in leaf tobacco strips which are ultimately shipped to the English market. The dealers may sell their supply either privately or on the large public auction markets.

At many leaf markets especially those which handle the export, dark and burley types, the agents of exporting concerns are important buyers. Exporting of leaf tobacco is conducted by two principal groups of concerns. (1) Private exporting companies ship to Great Britain and smaller quantities to Germany, Holland, Belgium, Denmark, Norway, Sweden, Africa, Australia, Japan and the foreign countries of North and South America. The Imperial Tobacco Company, for example, buys and exports great quantities of American tobacco to Great Britain, and the British-American Tobacco Company to other foreign countries. (2) So-called government "regies" have buyers in the United States and ship leaf tobacco to France, Italy, Austria and Spain. They represent the government monopolies which control the tobacco trade in those countries.

## FOREIGN TRADE IN LEAF TOBACCO

**Leaf Tobacco Exports.**—The exports of unmanufactured tobacco just referred to have since the close of the nineteenth century comprised from 288,000,000 to 766,000,000 pounds annually or usually about one third of the country's annual crop.<sup>10</sup> So important are they that one of the general types of leaf is expressly known as export tobacco, and in addition much Kentucky and Tennessee dark, burley, Virginia dark and bright yellow tobacco is shipped abroad. The principal foreign markets are the United Kingdom, Germany, China, France, Italy, Holland, Belgium, and Spain in Europe and Australia, Canada and British West Africa in other sections of the world.

**Leaf Tobacco Imports.**—Though the largest producer and exporter of leaf tobacco in the world, the United States nevertheless imports each year from 25,000,000 to more than 75,000,000 pounds of foreign leaf. The imports consist mainly of cigar fillers, binders and wrappers from Cuba, cigar wrappers from Sumatra and Holland, and cigarette leaf from Turkey and Greece. They comprise tobacco types which are not grown in the United States or are not produced in sufficient quantities to meet domestic needs. Some of the foreign leaf is imported directly by American manufacturers, the largest of which maintain foreign buying agencies; some is imported by importing dealers, and still other is shipped to the United States from foreign plantations owned and operated by large American tobacco manufacturers.

## LEAF TOBACCO PRICES

Although in general the prices paid to the growers of leaf tobacco in the United States vary from year to year according to commercial supply and demand, these forces have not always operated with exactness. In the domestic cigar leaf trade where there are no organized public markets and each sale is the result of private—often secret—bargaining, the grower has no definite price index as a basis for intelligent judgment. The growers of

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<sup>10</sup> In 1919 exports exceeded 50 per cent of the crop.

the leaf tobacco used for other purposes than cigar manufacture have the advantage of numerous organized auction markets where prices are publicly quoted. There is no single or small group of southern tobacco markets, however, which stands out as prominently as Chicago does in the grain and live-stock trades; New Orleans, New York and Liverpool in the cotton trade; or Boston in the wool trade. The organization of the American Tobacco Company and its subsidiary manufacturing and exporting companies has moreover at times restricted the freedom of competition to some extent, for it naturally reduced the number of independent buyers. The decline in prices during the years 1899 to 1903 was doubtless due in part to the great increase in the crop during those years, but among the growers there was a widespread feeling that it was largely due to the dominant position of the tobacco combination. They thereupon formed growers' associations in the various districts,<sup>11</sup> the members of which refused to sell their crop at the prevailing prices, and restricted production. Much leaf tobacco was stored in warehouses and became the basis for advances made by New York as well as local banks. The total annual crop declined from 816,000,000 to 660,000,000 pounds between the years 1903 and 1904 and did not again reach the level of the former year until 1909. The effect of this was to gradually raise the average grower's price from 6.8 cents per pound on December 1, 1903, to 10.3 cents on December 1, 1908.<sup>12</sup>

The price effect of supply is exerted largely by domestic leaf, the leaf imports from abroad being mainly non-competitive. Foreign wrapper tobacco and filler tobacco when mixed or packed with more than 35 per cent of wrapper tobacco is obliged to pay an import duty of \$2.10 per pound if unstemmed and \$2.75 per pound if stemmed, and the lowest duties on foreign filler and other classes of leaf tobacco range from 35

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<sup>11</sup> Dark Tobacco Growers' Association of Kentucky; Dark Tobacco Growers' Association of Tennessee; Burley Tobacco Growers' Association of Kentucky; Maryland Tobacco Growers' Association; Mutual Protective Association of Bright Tobacco Growers of Virginia, North Carolina, etc.

<sup>12</sup> Estimates of U. S. Department of Agriculture.

to 55 cents per pound.<sup>18</sup> The influence of demand, on the contrary, is international, over one third of the crop being annually exported.

Leaf tobacco prices, more so than those of most other farm staples, also vary greatly according to *quality and use*. The average prices of cigar leaf usually exceed those of other types of leaf tobacco with the exception of the flue-cured type. Cigar wrappers, moreover, sell at higher prices than binders, and binders higher than fillers. So, likewise, the bright yellow types usually sell for higher prices than burley leaf, and burley leaf higher than the dark and export types. While much wool, live stock, cotton, and to some extent even grain, is not graded until after it is sold by the farmers, the tobacco growers themselves frequently grade their crop before selling it.

*Local hauling, shipping and marketing costs* affect leaf tobacco prices and grower's profits in the same manner that similar costs influence the prices or grower's profits of other farm products. Leaf tobacco being an intrinsically valuable commodity, however, the aggregate influence of hauling and shipping costs is relatively smaller than in the case of commodities such as grain, hay or potatoes. Marketing costs including commissions, warehouse charges and other costs previously mentioned are, on the contrary, a relatively important item in leaf tobacco prices or growers' profits. When the leaf tobacco is sold in hogsheads, tierces or other containers the cost of such containers becomes an additional item, and frequently the costs incurred in the packing house which stands between the grower and manufacturer in so many instances affect either the price received by the grower or that paid by the manufacturer. The commercial costs are lowest when the manufacturer purchases directly from the grower, and highest when the crop is marketed through packers, wholesale dealers, or jobbers, exporters or middlemen, each of whom incurs costs and demands a profit for the services which he renders.

The manner in which grower's production costs affect leaf tobacco prices and grower's profits does not differ essentially

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<sup>18</sup> Tariff Act of 1922, Schedule 6.

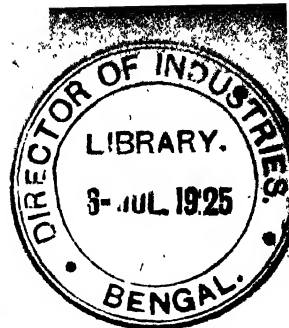


from the effect of such costs in other agricultural trades, and the influence of general factors is described in Chapter XX.

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## CHAPTER XIII

### THE MARKETING OF FRUIT

The fruit trade of the United States comprises so many varieties of fruit, and so many growing districts, markets and branches of activity that space forbids the discussion of many phases of this trade. Viewed from the standpoint of the organization of commerce, it will be necessary to describe only the distinguishing features of the fruit trade, chief among which are the methods of marketing the crop and the unusual amount of coöperation which has been developed among fruit growers. Much of the ensuing discussion applies equally as well to the trade in vegetables and other farm produce, but for purposes of brevity it will be confined to the fruit trade.

#### THE FRUIT-GROWING DISTRICTS

The fruit crop is commonly divided into five primary classes or groups: (1) orchard fruits, (2) small fruits, (3) grapes, (4) citrus fruits and (5) non-citrus tropical and sub-tropical fruits. Of each there is a large number of varieties, and most of them are produced in widely separated growing districts.

**Orchard Fruits.**—By far the largest group of American fruits consists of the so-called orchard fruits—apples, peaches and nectarines, pears, plums and prunes, cherries, apricots, quinces and others of less importance. These fruits taken as a whole are grown in many parts of the country. So generally are they produced that the census returns of 1919 showed the amazing total of 230,682,000 bushels. In California, Washington, New York, Michigan, Pennsylvania, Missouri, Iowa, Ohio, Virginia, Texas, Illinois, West Virginia, Colorado, Arkansas, and Oregon, many growers make a special business of raising orchard fruits and substantial quantities are grown in many other states.

**EACH DOT REPRESENTS  
1,000 ACRES**

ACTUAL AREA COVERED BY THE  
DOT IS 20 TIMES AS GREAT AS  
THE GRID AREA IT REPRESENTS



STATE	AGES	WAGE
Calif.	42.68	\$8,751.692
Ill.	40.48	\$10,453.513
Ind.	27.32	\$2,586.909
Mich.	38.84	\$2,585.671
Conn.	34.534	\$2,153.698
S. C.	29.547	\$2,086.151
Neb.	28.948	\$2,065.151
N. H.	26.01	\$1,957.255
N. Y.	25.679	\$1,954.654
Pa.	27.68	\$2,229.289
Utah	27.68	\$2,229.289
Mont.	25.68	\$1,777.289
N. Dak.	16.82	\$2,348.681
S. Dak.	16.82	\$2,348.681
R. I.	43.512	\$4,444.681
Ariz.	5.551	\$3,444.681
N. Mex.	2.652	\$1,398.123
N. Dak.	1.688	\$6,444.681
Wyo.	1.688	\$6,444.681
Mont.	1.779	\$7,444.681
S. Dak.	4.6118	\$2,686.909

## FRUITS AND NUTS—Continued

STATE	ACRES	VALUE	STATE	ACRES	VALUE
Ala. . .	81,867	14,257,945	W. Va. . .	61,116	35,963,369
Ariz. . .	77,486	7,864,389	Kans. . .	60,745	6,399,682
Calif. . .	77,478	6,962,369	Mich. . .	54,211	8,537,530
Ill. . .	72,375	9,811,549	N. Dak. .	46,518	2,911,000

## FRUITS AND NUTS

[illegible]

Prepared by U. S. Department of Agriculture.

MAP XVIII.—ACREAGE OF FRUITS AND NUTS, 1919.

The orchards yielding the 100,000,000 to over 220,000,000 bushels of apples annually grown in the United States are widely scattered, but three chief belts are discernable: (a) The old-time "apple belt" which has for many years produced heavy apple crops extends throughout New York, New England, Pennsylvania, Ohio, Indiana, Kentucky, Tennessee, Michigan and the Virginias. (b) The apple orchards of the trans-Mississippi Valley belt, including chiefly the Ozark territory of southern Missouri and northern Arkansas, southwestern Iowa, eastern Nebraska and Kansas, are newer but now yield heavy crops. (c) Still more recently the apple orchards of the Pacific Coast—California, Oregon and Washington—have shipped many carloads to eastern and middle-western markets; indeed few apples have been more widely advertised than those of the Hood River Valley of Oregon. A fourth apple district is gradually being developed in the Rocky Mountain states, Colorado, Idaho, Utah and Montana already shipping appreciable quantities to outside markets.

Peach growing is somewhat less general, but is likewise spreading over a greater area than in the past. For many years the commercial crop reaching the great fruit markets of the Middle West and East came largely from three districts, Georgia, Michigan, and California, but it is noticeable that many peaches have in recent years entered the trade from the orchards of New York, Pennsylvania, New Jersey, Ohio, the Carolinas, Virginia, Tennessee, Texas, Arkansas, Missouri, Oklahoma, Alabama and also from all the states south of the Potomac river.<sup>1</sup>

**Small Fruits.**—The country's total output of so-called small fruits comprised 324,989,000 quarts in the census year 1919. They include strawberries, blackberries, raspberries, cranberries, currants, gooseberries and other varieties of berries. Their pro-

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<sup>1</sup> Other orchard fruits are grown chiefly as follows: pears in Cal., N. Y., Wash., Mich., Oreg., Pa., N. J., Ohio, Ind., Mo., Ill., Tex., and Colo.; plums and prunes in Cal., Oreg., Wash., Idaho, N. Y., Tex., and Mo.; cherries in Cal., Mich., Oreg., Wash., Mo., Kan., Colo., N. Y., Wis., Ill., Ohio, Neb., Pa., and Iowa; apricots in Cal.; quinces in N. Y., Ohio, Pa., and Cal.

duction is widely scattered, but the leading districts are in New Jersey, New York, Massachusetts, Michigan, California, Maryland, Ohio, Illinois, Missouri, Arkansas, Pennsylvania, Delaware, Tennessee, Oregon and Washington.

**Grapes.**—In contrast with the output of orchard fruits which increased but slowly during the census decade 1899 to 1919, and that of small fruits, which declined somewhat, the country's grape crop advanced from 1,301,000,000 to 2,516,840,000 pounds. California's output of 2,055,645,000 pounds in 1919 exceeded the grape crop of the entire United States of twenty years earlier, and in the same year 253,000,000 pounds were grown in New York. Though vineyards are not uncommon in eastern and southern states such as Pennsylvania, New Jersey, Maryland, Virginia, and North Carolina; and in Illinois, Indiana, Missouri, Iowa, and Kansas, a large part of the total commercial crop is grown in four regions: (1) California, (2) western New York, (3) southwestern Michigan, and (4) northern Ohio. The crop has declined greatly in New York, and more grapes are now produced in Pennsylvania than in Ohio. The use of grapes for the making of grape juice and raisins, the irrigation of large areas in California and the development of large eastern markets for fresh grapes have nearly doubled the crop during the last twenty years.

**Citrus Fruits.**—The fruits known as "citrus" to distinguish them from "deciduous" fruits, include principally oranges, lemons and grapefruit.<sup>2</sup> Their production in the United States is confined very largely to California and Florida, and during the decade 1899 to 1919 the annual crop advanced from 23,500,000 to 38,000,000 boxes.

**Non-citrous Tropical and Sub-tropical Fruits.**—Though the citrous fruits constitute the main group of tropical and sub-tropical fruits grown in the United States, various non-citrous fruits of that type are grown. Figs and olives are grown mainly in California; pineapples, mangoes and bananas in Florida; guavas and persimmons in Florida and California. Small

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<sup>2</sup> Most of the orchard fruits are deciduous and are so called because the trees producing them shed their leaves each season.

quantities of loquates, pomegranates and dates are also included in this group of fruits.

### IMPORTATION OF FRUITS

In addition to the great quantities of domestic fruits grown in the United States, foreign fruits exceeding forty million dollars in value are annually imported from abroad, and smaller quantities from the country's island possessions. The imported fruits consist mostly of tropical and sub-tropical varieties not grown on a sufficiently large scale in the United States. The largest item in the foreign trade consists of bananas imported from Central America, the West Indies and Colombia. Sixty per cent or more are imported by the United Fruit Company, a large commercial concern which cultivates nearly 222,000 acres of fruit lands in the tropics and buys additional fruit from other growers; which operates over eighty vessels to carry fruit for its own account, general freight for the public, and many passengers; and which operates ice plants, hotels and hospitals, and in many ways is a prime factor in the commerce of the West India and Caribbean countries.<sup>3</sup> The bananas and other fruits which it imports are mostly sold on the large auction markets of the Atlantic and Gulf ports of the United States and thence distributed throughout the country. Other foreign fruits include currants imported mainly from Greece, Asiatic Turkey and Italy; dates and figs from Asiatic Turkey and other countries in Asia; grapes from Spain; lemons from Italy; olives from Spain and Greece; oranges from the West Indies, Italy, Mexico, Japan and England; pineapples from Cuba and the Hawaiian Islands, and raisins and other dried grapes from Asiatic Turkey and Spain.

### PREPARATION FOR MARKET

**Fruit Grading.**—As in the case of other farm products fruit must be graded in order to be properly marketed. The grading

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<sup>3</sup> Proceedings of House Committee on the Merchant Marine and Fisheries in the Investigation of Shipping Combinations (1912), Vol. I, pp. 711-731.

requires careful sorting of the fruit with three chief factors in mind: (1) uniformity, (2) relative freedom from injury resulting from handling, picking, storm, disease, insects or otherwise, and (3) agreement with the brand marks on the fruit package. Uniformity, the principal grading as well as selling consideration, refers mainly to size, color, and shape, which together represent appearance. It is a well-known market axiom that an apple of good appearance although of relatively inferior taste and quality is more easily sold in the large wholesale markets than one of superior taste and quality but inferior appearance.

Fruit is sometimes regraded and packed at the wholesale markets by dealers or commissionmen, but as in the case of leaf tobacco it is usually graded locally. It may be graded either by the local dealers who buy much fruit from the growers, or by the growers before they dispose of their crop. In the latter case it may be graded by the individual growers or by growers' coöperative associations, the tendency in many fruit districts being toward direct action by such associations or by the individual growers subject to association rules and inspection.

Though the formation of coöperative growers' associations leads to a degree of uniformity within given fruit districts, throughout the country as a whole there is great lack of uniformity in fruit grading. Many apple shippers for example sort their crop into three grades—selects, firsts and culls; but others grade them into four groups—selects, firsts, seconds and culls. Moreover, throughout the country as a whole there has been no general understanding as to the exact meaning of the various grades of fruit. More has in this respect been done in the grading of apples than that of other fruits, for the National Apple Shippers' Association has since 1900 endeavored to enforce upon its members two "standard" grades (Nos. 1 and 2), and in 1912 Congress enacted a statute, effective July 1, 1913, fixing three "standard" grades for apples shipped in interstate commerce. All of the standard grades comprise well-grown, hand-picked apples of normal shape, of one variety and practically free from defects, the total in a barrel being

not more than 10 per cent below the specifications of the law,<sup>4</sup> and other apples may not be shipped under standard grades. The difference between the three standard grades lies mainly in the size of the apples, No. 1 having a minimum diameter of  $2\frac{1}{2}$  inches, No. 2 not less than  $2\frac{1}{4}$  and No. 3 not less than 2 inches.

**Fruit Packing.**—The grading of fruit is inseparably connected with its packing. One of the abuses of the trade has been the occasional false packing of fruit by placing different grades in the same package, attaching misleading brands or marks, using undersized packages or failing to properly fill the packages. There has also been, and to some extent still is, lack of uniformity in the kind and capacity of fruit packages used.

Much improvement has been made in the matter of packing by the voluntary action of growers, growers' associations, and dealers. Fruit shipped from given districts is now commonly packed in standard packages, there being standard apple barrels and boxes, berry boxes and crates, grape baskets, Georgia, Michigan and Delaware peach baskets, etc.<sup>5</sup> Statutes have been enacted in many states, prescribing the minimum dimension of the packages, and penalizing underfilling and misbranding. The federal apple grading law of 1912, likewise, prescribes the standard dimensions of an apple barrel, requires branding according to the actual grade of the contents and penalizes misbranding.<sup>6</sup>

The packages of fruit which are honestly graded and packed and of superior quality are usually marked with the trademarks or brands of individual growers or shippers or of growers' associations. Many such marks are well known in the wholesale markets and constitute valuable trade assets.

**Pre-cooling.**—Perishable fruit destined to distant markets is frequently pre-cooled, i. e., it is cooled before shipment so as to reduce the cost of refrigeration and the amount of decay

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<sup>4</sup> Act of Aug. 3, 1912.

<sup>5</sup> F. A. Waugh, *Fruit Harvesting, Storing and Marketing*, pp. 73-91.

<sup>6</sup> Standard dimensions: length of stave  $28\frac{1}{2}$  inches; diameter of head  $17\frac{3}{4}$  inches; distance between 26 in.; circumference of bulge 64 in. (outside); cubical contents 7,056 cubic inches.



en route, cause the fruit to arrive in better condition, and permit it to ripen to a greater degree before being picked. The Interstate Commerce Commission has decided that pre-cooling may be done either by the railroad or the shippers and that when done by the former the maximum charge for pre-cooling must not be unreasonable.<sup>7</sup>

### SHIPPING FRUIT TO MARKET

Although some fruit may in the future be shipped in refrigeration vessels from the Pacific Coast to eastern markets through the Panama Canal, fresh fruit transportation has thus far been largely a rail movement, for the perishable fruits, especially, require rapid shipment so as to avoid delay *en route* and shippers make extensive use of the railroad reconsignment privilege.

**Refrigeration Car Service.**—The rapidity of movement as well as the required temperature for shipping perishable fruits is provided by the refrigeration car service of the rail carriers. Some of the refrigeration cars are owned by the carriers and others by private car companies, who receive two cents per mile from the railroads for the use of their cars.<sup>8</sup> The icing of the cars is likewise performed in some instances by the railroads, and in others by the private car companies. In either event the railroad company, in addition to the regular freight rate, collects an icing charge from the shipper, which it retains or turns over to the private car company according to whether the one or the other performs the refrigeration service.

As stated above the fruit may be pre-cooled before shipment, but if shipped long distances the cars must be re-iced en route. In order to expedite the service, icing stations are therefore erected at various points on the rail lines, agents are placed in charge, many cars are concentrated and "parked" in the growing districts shortly before the shipping season begins so as to be available when required, and the loaded cars are rushed

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<sup>7</sup> 23 I. C. C. Rep. 267 (April 8, 1912).

<sup>8</sup> American Railway Assoc. Freight Tariff No. 7-B effective July 1, 1922.

to market as rapidly as possible, frequently in special trains. It is a common practice to ship fruit eastward or northward from the growing districts without knowledge as to its final destination, the cars being held at certain reconsignment points for final shipping orders. It is highly important that markets should not be overstocked, and the shippers, distributors, or growers' exchanges therefore prefer to keep the cars which are traveling across the country under their control until they ascertain existing market conditions.

The direct and important connection between the refrigeration car companies, the railroads and the private refrigeration car companies, the uses and past abuses of these companies, and the present control of the icing charges by the Interstate Commerce Commission, have been fully discussed elsewhere.<sup>9</sup>

**Fruit Markets.**—There are two quite distinct classes of fruit markets in the United States; the "direct, special, or retail markets," and "the indirect, general, or wholesale market."<sup>10</sup> These markets differ in many respects: (1) Special markets are local in character and are located everywhere throughout the country, especially in cities situated near the fruit orchards. General or wholesale fruit markets on the contrary are located chiefly in the great cities and centers of population, and receive fruit not only from nearby growers but from distant parts of the United States and foreign countries. (2) Competition in the special markets is local while in the general markets it is national and world-wide. (3) The special and general fruit markets differ also in that the former handle fruit in small quantities, while the latter handle it in carload and vessel load lots. (4) The profits per bushel, quart or package in the special markets are usually large as compared with those in the general markets. (5) In the former the growers usually sell either directly to consumers or to retail stores, while in the latter they usually sell to middlemen and seldom direct to consumers. (6) The former accept an almost unlimited number of varieties, while the latter confine themselves largely to a smaller number of

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<sup>9</sup> See E. R. Johnson and G. G. Huebner, *Railroad Traffic and Rates*, Vol. I, Chap. XII.

<sup>10</sup> F. A. Waugh, *Fruit Harvesting, Storing and Marketing*, pp. 4-8.

standard, well-known varieties. (7) In contrast with the special markets which pay as much attention to quality as to appearance, the general markets rely more largely upon the appearance of the fruit. (8) The growers with a special market can largely disregard shipping quality, while those shipping to the general markets must so far as possible select varieties which will bear shipment and rough handling. (9) "The wholesale market requires a standard package, while almost any neat, clean package may be used in the direct market, and sometimes fruit is delivered in bulk from sacks, boxes, barrels or baskets, without any package. In the wholesale market a gift package is practically always required, while the man who has private customers frequently has his boxes or baskets returned to him."<sup>11</sup> (10) In contrast with the special or private markets which frequently pay large prices for fruit out of season, the general markets are usually available only for fruits in season.

Although particular growers and small crop-growing districts often ship their entire crop to the same wholesale market year after year, fruit is more commonly distributed in strict accord with market conditions. Thus California fruit has the advantage in nearby western markets, but thousands of carloads are shipped to the large cities of the trans-Mississippi Valley, to Chicago, St. Louis, Milwaukee and all the large cities of the Middle West, and to New York, Boston, Philadelphia, Baltimore, Washington, Pittsburgh, Buffalo and other eastern markets. Each large district supplies the nearby markets during its fruit season, but usually ships to many other markets throughout the country. The growers of the Atlantic seaboard, however, ship relatively little fruit westward because they are located near the huge eastern wholesale and retail markets which readily accept enormous quantities of fruit.

**Fruit Exports.**—Although foreign markets for American fruits are as yet comparatively small, exports of fruit have increased greatly and their value now exceeds seventy million dollars annually. The principal items comprising this export trade are canned fruits, dried fruits, particularly raisins, prunes, apples

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<sup>11</sup> *Ibid.*, p. 6.

and apricots; also oranges, apples and smaller quantities of other fresh fruit. Great Britain and Canada are the principal foreign markets developed thus for but substantial quantities of dried and canned fruits are exported to many other parts of the world.

**Fruit Warehouses.**—Cold storage warehouses in which fruit may be stored have been erected both at some of the points of shipment and at the large wholesale markets. The former, many of which are operated by coöperative growers' associations, are mainly used for packing and pre-cooling fruit for shipment, the total amount of fruit stored in them for sale in the future, except at a few points, being relatively small. The large cold storage warehouses at the central markets are operated by private warehousemen and railroads, and are used for the storage of many kinds of commodities. They act as great reservoirs which equalize the supply of fruit throughout the year, especially between harvesting seasons. The warehousemen act as trustees for jobbers, commissionmen, growers, or any of the marketing agencies mentioned below; they frequently finance the operations and sometimes invest in the corporations of their clients; and many of them deal in fruit jointly with their clients or entirely on their own account.<sup>12</sup>

#### METHODS OF MARKETING FRUIT

**Distribution in Wholesale Markets.**—The sale of fruit in the special or retail markets by growers to consumers or retail concerns is a direct sale which requires no detailed description. The great fruit-growing districts, however, are largely dependent upon the large wholesale markets where they dispose of their crop in many different ways. In speaking of the sale of fruit by growers it is of course understood that they may act either individually or jointly through a coöperative association or exchange.

1. Many fruit growers sell their fruit to local dealers or ship-

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<sup>12</sup> See G. H. Powell, *Coöperation in Agriculture*, pp. 203, 204.

pers under any one of various kinds of contracts.<sup>18</sup> They may sell the orchard as a whole, the dealers agreeing to accept the fruit on the trees, pay a lump sum for the crop, and perform the necessary picking, sorting, grading, packing and hauling. They may sell their fruit "on the table" in which case the growers do the picking and hauling while the dealers furnish the packages, perform the sorting, grading and packing, and pay an agreed amount per barrel, box or other unit. The growers may sell "f.o.b. loading station," i. e., they may receive so much per barrel, box, etc., delivered at the shipping station, all intermediate work being done by them. They may also sell their crop for delivery at the dealer's packing warehouse, at so much per barrel or other measure, the dealer preferring to prepare the fruit for final shipment to the wholesale markets.

Local dealers or shippers of this kind may confine their marketing activities to particular localities or they may act as traveling buyers. They may purchase fruit locally to fill orders received from the central markets or they may undertake to locate buyers after they have purchased fruit from the grower. They may have standing connections with a central market wholesale dealer, or they may depend upon central market commissionmen or brokers to whom they consign their purchases. They are sometimes known as brokers, but should be clearly distinguished from the more commonly known fruit and produce brokers who transact business at the large central markets.

2. Fruit and produce growers may sell locally to or through so-called "fruit distributors," or "marketing corporations," who usually resell direct to wholesale jobbers for cash f.o.b. or subject to inspection on arrival, through auction companies, or in any other manner, and receive a brokerage charge of from 5 to 15 per cent on the gross sales. Some of them also buy fruit from the growers on their own account, thereby acting as dealers. One of the largest distributing concerns is the "California Fruit

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<sup>18</sup> See Report of Secretary of Missouri State Board of Horticulture (1912), pp. 19, 20.

Distributors" which handles about 75 per cent of the entire deciduous fruit shipments of California.<sup>14</sup>

Distributors operate under contract with large numbers of growers. The contracts covering the marketing of western cantaloupes, for example, usually include clauses providing for the payment of a stated commission by the growers and an agreement on his part to plant a specific acreage, to pick, pack and handle the crops in a first class manner, and to deliver the cantaloupes at specified shipping sheds in good condition. The distributor on his part may agree to furnish seeds and crates at agreed prices, to provide a shipping shed for the use of which an additional shed fee may be collected; to make agreed advances to the grower before his crop is sold; to load the packed cantaloupes into properly prepared freight cars, guarantee freight and icing charges, handle freight claims, use his best efforts in the marketing of the cantaloupes, and permit the grower to inspect the original account of sales of every car shipped for the grower's account.<sup>15</sup>

3. Somewhat different from the local marketing agencies referred to above are the so-called local fruit or produce "exchanges" which usually are private stock companies and not exchanges in the sense this term is used in the grain, cotton and live-stock trades. Local marketing agencies of this kind usually distribute fruit and produce for growers or growers' association subject to their order, and receive a brokerage charge for services rendered.

4. The primary distributor of fruit and produce arriving at the central, wholesale markets are known as car-lot wholesalers. These concerns obtain their supply in many different ways, for in addition to the fruit purchased from the growers by mail orders or traveling solicitors, they buy through commissionmen, brokers and auction companies or from local dealers and distributing concerns, and local dealers sometimes act as buyers

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<sup>14</sup> F. B. McKevitt, "Marketing of Fruit by California Fruit Distributors," Proceedings of 38th Fruit Growers' Convention of California (1910), pp. 53-60.

<sup>15</sup> See U. S. Department of Agriculture, *Bulletin No. 401*, "Marketing and Distribution of Western Muskmelons."

for them. Car-lot wholesalers in turn sell most of their supply to jobbers, retail grocery stores, retail fruit stores and stands, fruit vendors and hucksters, and generally to the retail trade. They also place much fruit in storage, gradually disposing of it as the jobbers and retailers find a market.

5. In the fruit and produce trades a distinction is drawn between car-lot wholesalers and jobbers. The latter also buy fruit and produce on their own account for resale to retailers and other jobbers. They act as intermediaries between car-lot wholesalers and retailers in that they usually buy in less-than-car lots from the former for rapid distribution in still smaller lots to any available customers. Jobbers also purchase some of their supplies from commission merchants, auctions and public markets. Their chief economic function is in facilitating the rapid distribution of perishable fruits and produce.<sup>16</sup>

6. Much fruit is sold by growers and local buyers through central commissionmen. Indeed, the fruit trade was for many years closely dependent upon the commission houses, and although the tendency is to reduce the number of middlemen, the commission house continues to be an important link in the fruit marketing machinery. The practice of many local shippers is to consign their fruit to the commissionmen who sell it direct to retail stores, vendors, hotels and other retail establishments, and if necessary to car-lot wholesalers and jobbers, or through auction companies. They receive from 5 to 10 per cent on the gross sales as a commission for their services, and after deducting freight, refrigeration, drayage and any other shipping costs which may have been incurred, remit the balance to the local shipper. Some commissionmen taking advantage of the distance which separates them from the local shippers, have at times stooped to dishonest practices, and although the dishonest concerns doubtless are the exception to the general rule, the resulting distrust has done much to encourage the rise of car-lot wholesalers, jobbers, auction houses, growers' coöperative exchanges and other more direct means of marketing.

The distinctive economic functions performed by commission

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<sup>16</sup> U. S. Department of Agriculture, *Bulletin No. 267*, p. 20.

houses in the fruit and produce trades may be stated as follows:—"commission houses offer almost the only good outlet for undersized goods which can not be sold direct to the wholesale trade. Acting as primary receivers of less than car-lot shipments they serve as a medium through which to market all goods which can not be sold direct to car-lot wholesalers and when honest and efficient, they offer to inexperienced shippers the valuable services of trained market experts in disposing of their produce."<sup>17</sup>

7. Some fruit is sold by growers and other local shippers through central market fruit brokers, who differ from the commissionmen chiefly in that they usually sell car-lots to the wholesale trade. They solicit orders from car-lot wholesalers and then secure the required amount of fruit from growers or local buyers, receiving a brokerage fee of from 3 to 5 per cent on the gross sales, or of agreed amounts per barrel, box or other package. Growers and local shippers also consign carloads to them for sale subject to their order. Some of them act as jobbers, speculating in the fruit which they handle; and they endeavor at times to distribute the surplus stock of the large markets among the smaller markets of the surrounding community.

Fruit and produce brokers perform an economic function in that they act as representatives and salesmen for growers and local shippers of car-lots who have no direct representative at the wholesale markets and are not able to make direct sales to car-lot wholesalers. They also "stimulate and expand the market to a certain extent by their expert canvassing of the trade and any influence that stimulates active buying and selling must be regarded favorably. In general, their chief usefulness lies in the fact that their activities on the market tend to maintain a steady flow of business."<sup>18</sup>

8. Auction companies have been formed at many large markets for the public sale of fruit and produce to the highest bidder. Like commission and brokerage concerns the auction com-

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<sup>17</sup> U. S. Department of Agriculture, *Bulletin No. 267*.

<sup>18</sup> U. S. Department of Agriculture, *Bulletin No. 267*, p. 14.



panies accept consignments of fruit from growers, local dealers or others, but they differ in that while the former sell privately to a relatively small number of buyers, the auction concern sells to a large number at public sales, receiving from 2 to 15 per cent on the gross sales for their services. They sell even more commonly for car-lot wholesalers, brokers, commissionmen or other central market agencies.

The stockholders of the auction companies in some instances are the wholesalers and other members of the trade, and some of them have not provided the open and unrestricted markets which the auction system usually provides. "The auction company may also be a dealer in the products which it sells for its patrons. It may be engaged, either directly or indirectly, in financing its clients, in handling the products on joint account with its patrons, or in the purchase of products to be sold in competition with those of its clients."<sup>19</sup> At markets where the auctions are widely patronized, they afford a general index of wholesale prices and market conditions, a quick outlet for surplus holdings and an additional means for the expansion of the wholesale market. They tend to keep fruit and produce "moving in a more or less steady stream from producer to consumer."<sup>20</sup>

9. Though the bulk of the country's fruit sold in the large wholesale markets is handled through the various agencies mentioned above, some of it is sold in these markets directly by the growers. In well-organized fruit-growing regions the growers sometimes form coöperative selling exchanges, such as the California (Citrus) Fruit Growers' Exchange, which have salesmen at the large markets who keep the growers advised as to the state of the market and sell their fruit to wholesale or retail buyers or through auction companies, thus dispensing with the commissionmen and brokers and sometimes with the jobber and auction companies. In the great eastern and middle-western fruit markets the efforts of these salesmen do not extend beyond the wholesale and retail buyers. In cities near the

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<sup>19</sup> Proceedings of New Jersey State Horticultural Society (1912), p. 70.

<sup>20</sup> U. S. Department of Agriculture, *Bulletin No. 267*, p. 15.

growing districts, however, some of the coöperative associations, when possible, sell direct to consumers.

Some individual growers also sell their fruit to retailers without the medium of commissionmen, jobber or other middleman. Those located near a large market can in many instances readily sell some of their crop in this way, but it is at times done also by growers located at a distance. They may sell freely to all bidders or under exclusive contracts, they may sell it f.o.b. at point of shipment, for delivery at destination, or for delivery at retailer's premises; and they may arrange to have the retailer handle the fruit on his own account or on a commission basis. A grower as far away as Montana regularly stores some of his apples in eastern cold storage warehouses, from which they are delivered each day by a transfer or drayman to retailers who receive from 20 to 30 per cent on the retail sales for their services as retail salesmen.<sup>21</sup>

On the whole, relatively little fruit is as yet sold directly by growers to retailers at the large general fruit markets. The great bulk passes through the regular trade agencies mentioned above. Though serious abuses have at times arisen, most of these agencies are, even by some of the exponents of growers' coöperation, regarded as "men of integrity, business energy and resourcefulness, and as equal in these respects to any other class of men who deal in the products of the soil."<sup>22</sup> It should be noted that the various agencies which have been discussed separately, frequently overlap—commission men, brokers and auction companies, for example, may act as jobbers; jobbers may handle some business on consignment, and local dealers may act as brokers.

Some fruit and produce is also sold by growers direct on public markets or indirectly on public markets through jobbers and retailers. These markets, however depend largely upon producers in nearby growing districts for their supply. Car-load lots shipped from more distant points are not commonly disposed of in public markets.

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<sup>21</sup> Annual Report of Montana Horticultural Society (1912), pp. 47, 48.

<sup>22</sup> G. H. Powell, *Coöperation in Agriculture*, p. 205.

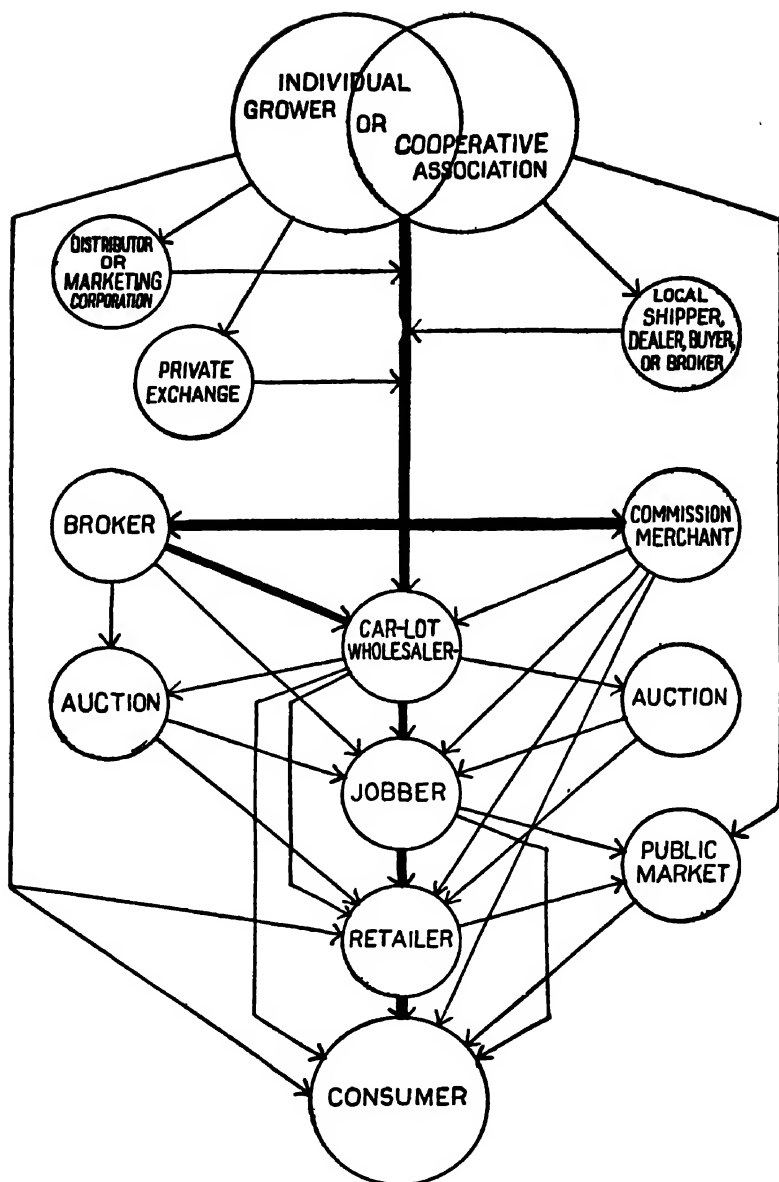


DIAGRAM X.—TRADE CHANNELS FOR FRUIT.

The various channels of distribution for fruit and produce moving through the large wholesale markets are set forth concretely in diagram No. X.

**Retailing of Fruit.**—Fruit differs from the farm products previously discussed in that a larger portion of the crop is retailed to consumers.

1. A large proportion of the fruit crop is retailed by general grocery stores operating individually or in chains, by special fruit and produce stores or stands, by fruit vendors and hucksters and other retail dealers who obtain their supply from the wholesale markets or direct from fruit growers.

2. Consumers purchasing in bulk sometimes purchase from certain wholesale dealers or commission men who do a retail as well as a wholesale business.

3. Growers located near the retail markets frequently retail their fruit, vegetables and other produce to the consumers.

4. Much fruit has in recent years been disposed of to consumers, who purchase directly from growers or indirectly through middle-men.

Fruit retailers reach the consumers in numerous ways. They may dispose of their fruit at private stores or stands, directly from railroad cars, at consumers' premises, or at public or municipal markets. The latter are particularly convenient for growers who desire to retail in large cities.<sup>23</sup> At a limited number of municipal markets a wholesale as well as a retail trade in fruit and produce is conducted, but most of them are primarily retail markets.

#### FRUIT GROWERS' COÖPERATIVE ASSOCIATIONS <sup>24</sup>

In no other branch of farming industry is there so much coöperation among growers as in the fruit and vegetable industries. One of the conditions which has encouraged this coöperation is that many fruit-growing districts have been confronted by unusual difficulties in the shipping and marketing of their crops. The chief reason, for example, why coöpera-

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<sup>23</sup> See pp. 26, 27.

<sup>24</sup> See also Chap. XV.

tion was established at an early date in the Pacific and far-western districts was the difficulty of profitably selling in distant markets. Coöperation among fruit growers is also encouraged by the geographical compactness of many of the growing districts, by the similarity of the fruit grown in a given district, by the successful education of many growers in the trade possibilities of coöperation, and in some regions by the precedent of coöperative irrigation.

The coöperative associations have been confronted by numerous obstacles as a result of which many have not been successful. The individuality and distrust of the growers which in many cases is broken down only by the force of necessity, management by impracticable and low-salaried managers, organization in times when the growers were prosperous and did not feel the effects of low prices, unfair demands by members as to prices and grading, the adoption of unsuccessful methods, and opposition on the part of private buyers, have caused the downfall of numerous coöperative ventures. Many others, however, have been successfully organized and are in practical operation.

The coöperative associations are variously organized, some of them being organized as joint-stock companies with distribution of profits on a stock basis and others as simple non-profit associations operated on a cost basis. The voting power of the shareholders is likewise arranged in different ways—on the basis of the amount of stock held, the acreage planted, the probable crop, the crop of the preceding year, or each member may have but one vote regardless of other considerations.

Fruit growers coöperate in many different lines of activity. As was previously mentioned, some of them coöperate in the *shipping and marketing* of fruit, selling their crops either through regular trade agencies or through their own salesmen. The California (Citrus) Fruit Growers' Exchange, which is an instance of successful and extensive coöperative marketing, has a threefold organization: (1) Locally it is based upon 115 local associations, each comprising from 40 to 200 growers and about 500 acres of orange and lemon groves. Each handles the fruit of its members on a cost basis, either for its individual

members separately or by pooling it each month or season. (2) The local associations are banded together in 17 district exchanges, which are also operated on a non-profit basis, and act as district clearing houses. They order cars for the local packing houses, keep a record of the cars shipped by each local association, keep them posted with authentic trade information, and return to them the proceeds of their sales. (3) The district exchanges, in turn operate through the California Fruit Growers' Exchange which is managed by a skillful manager and a board of directors. This central exchange provides the district exchanges with the necessary marketing facilities on a cost basis, gathers current information, issues daily bulletins, advertises, handles claims and litigation, provides an organized selling force consisting of some 75 principal offices in the leading markets of the United States, Canada and Europe and 200 salaried salesmen, and remits the proceeds of sales to the growers through the district exchanges.<sup>25</sup>

In the selling of fruit few coöperative associations have gone beyond the wholesale trade, but they have accomplished much through careful distribution and shipping, protection of members' interests in the wholesale markets, and in some instances through eliminating some of the middlemen. They sell either for each grower individually, or when the fruit of a given district is fairly uniform, in pools arranged on a daily, monthly, semi-monthly or seasonal basis.

The fruit growers of many districts also coöperate in the *grading and packing of fruit*, these functions being performed either by association employees at central packing houses or by the growers according to association rules and subject to inspection. Some *harvest* their fruit coöperatively, the fruit being picked either by gangs of trained association pickers or by the growers according to rules. Many coöperate in the *purchase of fruit packages, pruning and picking equipment and other supplies and fertilizers; in the protection of*

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<sup>25</sup> G. H. Powell, pp. 241-246; *Proceedings of 40th Fruit Growers' Convention of California*, pp. 40-44; *Ibid.*—39th, pp. 85-89; F. W. Powell, Coöperative Marketing of California Fresh Fruits, *Quarterly Journal of Economics*, Feb., 1910.

*fruit from insects and pests*; and in the erection of *cold storage warehouses* and the *storage and pre-cooling of fruit*. There is difference of opinion among the fruit growers as to the likelihood of generally going beyond the wholesale markets in the coöperative sale of fruit, but many are convinced that in the fields of activity mentioned above there are no valid reasons why they should not apply the same principles of united action which have been so effectively applied in the manufacturing, mining and transportation industries.

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## CHAPTER XIV

### THE TRADE IN DAIRY PRODUCTS

#### PRODUCTION OF DAIRY PRODUCTS

The yearly output of dairy products consists primarily of milk which is marketed either as whole milk or in the form of cream, butter fat, butter, cheese, manufactured milk products, and various by-products such as buttermilk, whey and skim milk. A combined total value or quantity figure would involve many gross duplications, for whole milk is the basis from which the various milk products are obtained, and the latter are produced partly on the farms by dairymen and partly in factories.

The Census of 1919 reports a total value of \$1,148,462,000 including only farm sales of milk, cream and butter fat and farm production of butter and cheese. It also reported an estimated yearly production of 7,805,000,000 gallons of milk. The Department of Agriculture has recently published estimates of the value of all dairy products produced on farms ranging from \$2,960,000,000 in 1919 to \$2,090,000,000 in 1922.<sup>1</sup> The Department estimates the total quantities of raw milk used for various purposes in 1921 as follows (Table XIII) :—

The production of milk is distributed widely over the central, western and eastern states, and substantial quantities are produced throughout the United States, especially in the vicinities of the larger cities where large quantities of market milk are required. This need for market milk is primarily responsible for the heavy output of milk throughout the eastern states, although much milk is also produced on eastern farms for manufacturing uses (*see* Map No. XIX).

Market milk is the largest single item. Most of the large

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<sup>1</sup> Includes milk sold and consumed on farms, butter made, cheese made, cream sold, butter fat sold, buttermilk, whey and skim milk.

quantities of milk produced in New England, southern New York and eastern Pennsylvania are sold for household purposes. The higher price paid for market milk has pushed back from the

TABLE XIII.  
PRODUCTION AND USES OF WHOLE MILK, 1921

Product	Pounds	Per Cent
Creamery butter.....	22,153,698,000	22.408
Dairy butter.....	13,650,000,000	13.807
Cheese.....	3,558,380,000	3.599
Condensed and evaporated milk	3,660,408,000	3.703
Powdered milk.....	33,944,000	.034
Powdered cream.....	2,470,000	.002
Malted milk.....	34,434,000	.035
Sterilized milk (canned).....	5,074,000	.005
Milk chocolate <sup>1</sup> .....	40,000,000	.41
Oleomargarin.....	<sup>2</sup>	.....
Ice cream.....	3,355,000,000	3.396
Total used in manufacturing...	46,493,408,000	47.030
Milk for household purposes...	45,143,000,000	45.660
Milk fed to calves.....	4,260,000,000	4.310
Waste, loss and unspecified uses.	2,965,868,000	3.000
Grand total.....	98,862,276,000	100.00

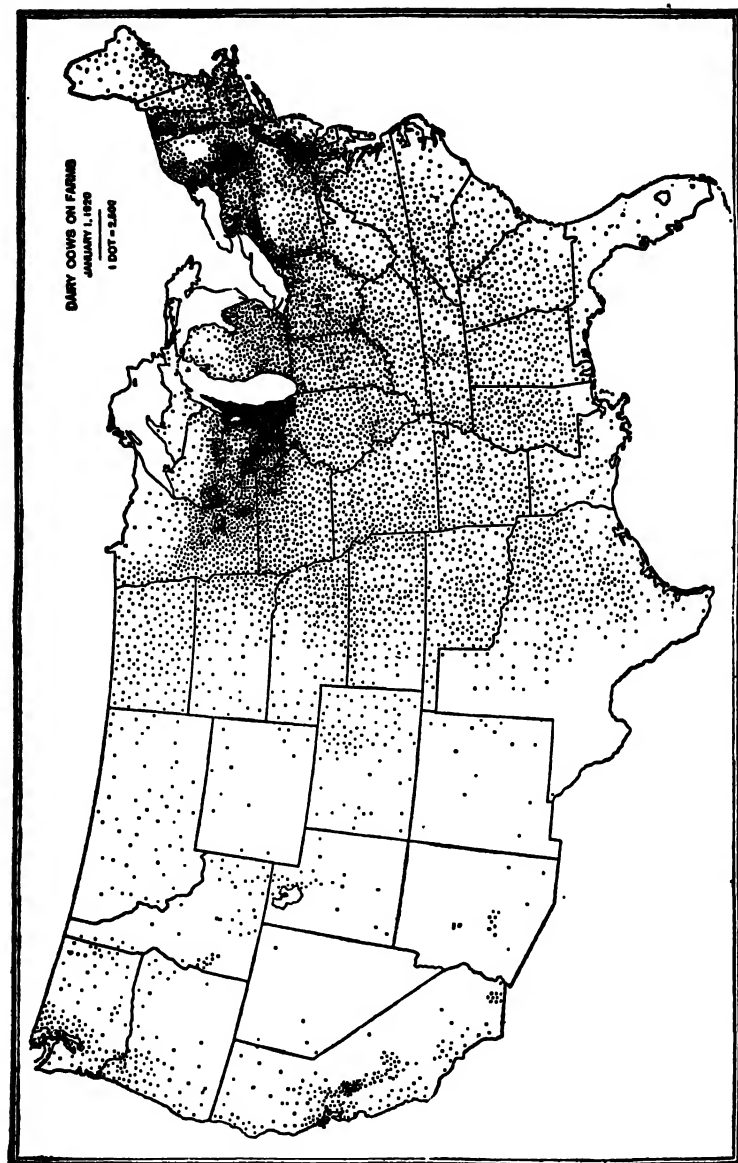
<sup>1</sup> Year Book 1922, p. 293.

<sup>2</sup> Also made from powdered, condensed and evaporated milk.

<sup>3</sup> Negligible amount of milk used.

large cities and industrial districts, the butter and cheese areas in these states, and the same dependence upon market milk obtains among the producers located near the large cities in northern Ohio, Indiana, Illinois, southern Michigan, Wisconsin and Minnesota.

The production of milk for butter is more widely distributed, for butter is less perishable than market milk and is better suited to long distance transportation. Over thirty-six per cent of the milk output goes into the production of butter. Of the 1,628,200,000 pounds of butter produced in the United States in the Census Year 1919, 56½ per cent were produced in creameries and 43½ per cent on the farms. Dairy butter is



Prepared by U. S. Bureau of the Census.

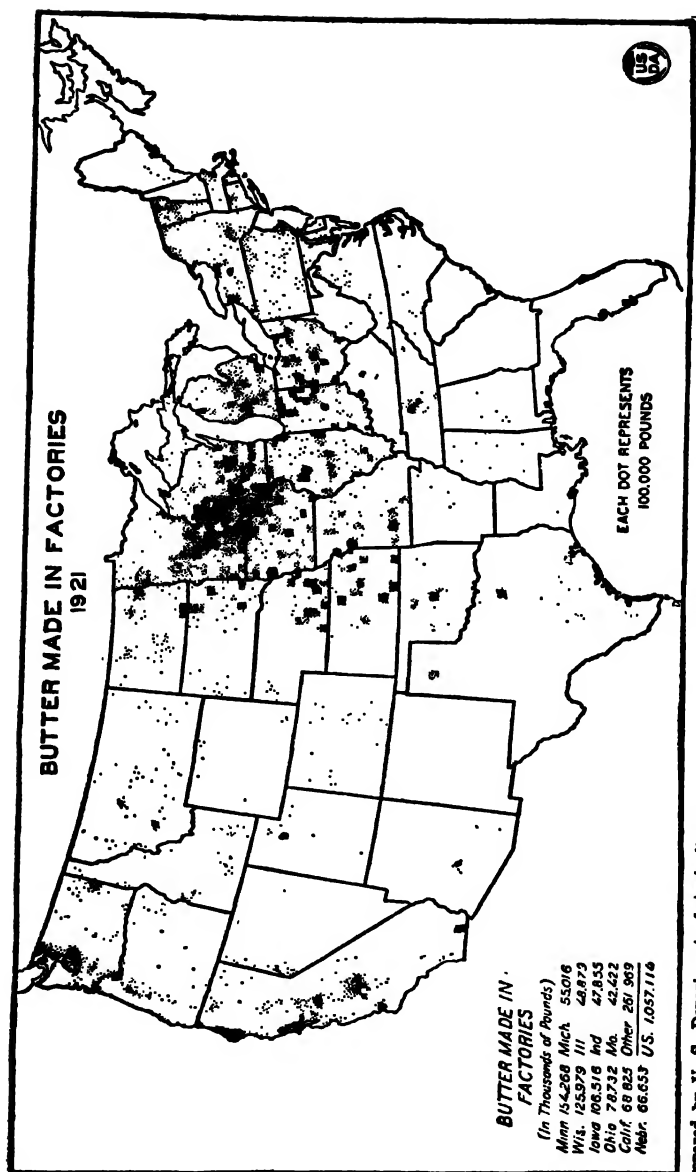
MAP XIX.—DAIRY COWS ON FARMS OF U. S., JAN. 1, 1920.

made on almost one-half of the farms of the United States and this in itself results in a comparatively wide distribution of milk production for purposes of manufacturing butter. The tendency, however, is to produce more of the country's butter output in creameries. The creamery industry has become of vast importance in Wisconsin, Iowa, Michigan, Ohio, California, Nebraska, Indiana, Minnesota, Illinois, Kansas and Missouri, but as is shown in Map No. XX, the industry is important in sections of many other states.

Cheese production is more specialized than the production of butter for although much cottage cheese is produced on farms only a small proportion of it reaches the local market and it is comparatively unimportant in the large cheese markets. Cheese is produced largely in factories, and the industry has developed most in Wisconsin and New York. As shown in Map No. XXI substantial quantities are also produced in California, Pennsylvania, Michigan, Minnesota, Oregon and Ohio.

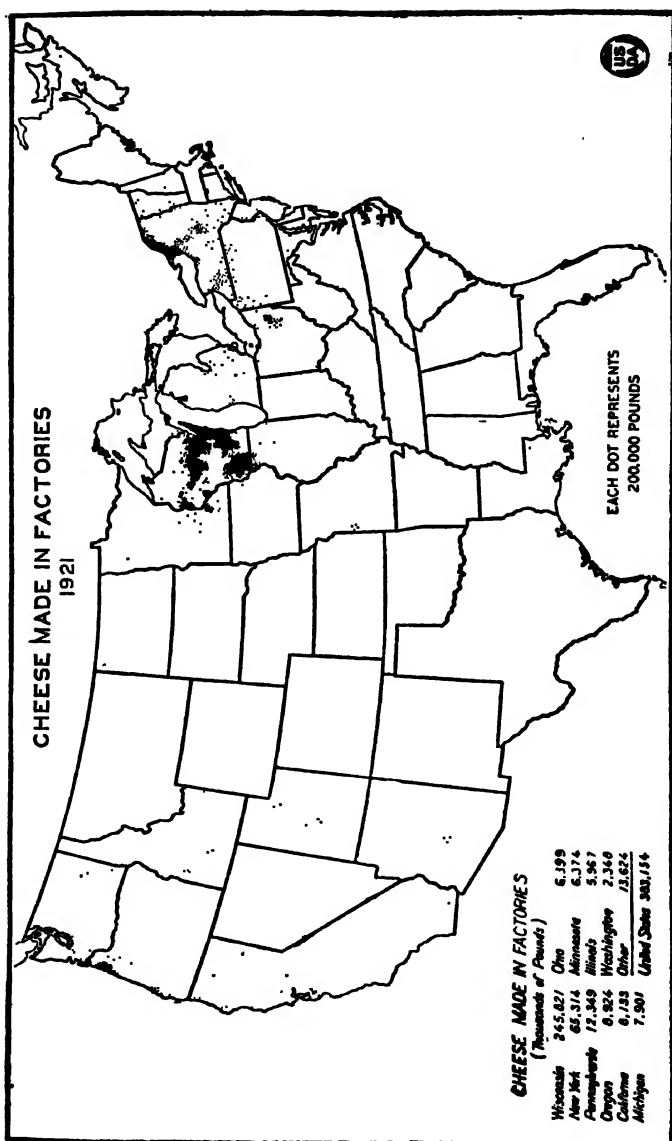
The processed or canned milk industry has grown rapidly in recent years. The output of evaporated and condensed milk increased from 494,797,000 to 2,093,646,000 pounds during the census decade 1909 to 1919. This industry is also concentrated geographically, most of the condenseries being located in Wisconsin, New York, Michigan, Pennsylvania, Illinois, Washington, California, and Ohio. Other types of manufactured milk, consuming smaller quantities of milk, are powdered milk and cream, malted milk and canned sterilized milk.

Many milk producers find a substantial market in the industries producing ice-cream, milk chocolate, casein, and milk sugar. Ice-cream is an industry in all cities and many villages and further quantities are made in the home. Milk chocolate is produced chiefly in New York and Pennsylvania. Casein which is made from skim milk and butter-milk is produced principally in California, New York and Vermont; and milk sugar which is usually made from cheese and casein whey is produced in factories located in New York, Vermont, Ohio, California and Michigan.



Prepared by U. S. Department of Agriculture.

MAP XX.—CREAMERY BUTTER PRODUCED IN 1921.



Prepared by U. S. Department of Agriculture.

MAP XXL.—FACTORY CHEESE PRODUCTION, 1921.

## THE MARKET MILK TRADE

**Methods and Agencies.**—In the larger cities most of the market milk is distributed indirectly through city milk dealers or distributors. Dealers who operate in the smaller cities and cities of medium size are usually able to obtain the necessary supply of milk from an area extending no further than five or six miles away. Some of the very large cities, however, require such a large supply that dealers receive shipments from a distance of several hundred miles. The New York City milk market receives milk from points near Buffalo and in Canada over three hundred miles distant; the Boston milk supply includes shipments from points 210 miles away; Philadelphia dealers receive shipments from points in New York State near Buffalo; and the Chicago milk supply includes shipments from points as far removed as Fond du Lac, Wisconsin. Cream shipments are received from even larger areas, although the larger part of the supply of both milk and cream is obtained from comparatively nearby-producers.

City milk dealers usually enter into contracts with dairymen for amounts which will give them sufficient, or nearly sufficient, for the period of low milk production which usually begins in August and continues for several months of poor pasturage. Milk production is so seasonal in character that contracts based on low production result in a surplus during May, June and July which the dealers endeavor to divert into the production of ice cream and other dairy products. Dealers either sell their surplus to manufacturers of ice-cream and other dairy products or are themselves equipped to manufacture ice-cream, butter, cottage cheese, buttermilk or processed milk. A shortage during the period of low production is made up mainly by diverting milk from creameries, cheese factories and condenseries. Dealers may have standing arrangements with outside producers of dairy products to ship milk when their contracts result in an inadequate supply.

Much market milk is transported from nearby dairymen to city dealers by wagon and motor truck, in some instances by the dealers but more commonly by the dairymen acting either indi-

vidually or by arrangement among themselves. Milk received from the more distant points is mainly transported by railroad under various arrangements for regular and prompt deliveries. Railroads variously handle milk shipments in baggage cars, express milk cars, special refrigerator cars or special tank cars. The cars usually move either in passenger trains or in fast freight trains running on schedules. Many railroads provide a special early morning or pick-up train service to serve comparatively nearby dairymen, and night milk trains which leave more distant points in the afternoon and arrive at the large city milk terminals during the night. The milk transported on the night trains is shipped mainly from the so-called "centralizing plants" which are operated in country districts by some of the larger city dealers to purchase milk from many dairymen and prepare it for market before shipment. Milk shipped direct by the dairymen on morning trains is usually shipped in cans and requires preparation at the city milk plants of the dealers before delivery to their customers. The points at which centralizing plants are located are sometimes referred to as "milk-shipping points," or "receiving stations." Some market milk is also transported by electric railways.

In the delivery of market milk to household customers the large city dealers so far as delivery equipment is concerned depend mainly upon one-horse wagons. Their drivers cover definite routes and in many cases are employed on a commission basis. Overlapping of routes served by different dealers constitutes one of the principal economic wastes of the market milk trade. Wholesale deliveries of milk by large city dealers are more commonly made in motor trucks or two-horse wagons. Smaller dealers often, although not always, use two-horses, usually smaller horses, in making retail deliveries.

City dealers usually market a portion of their milk supply through retail stores. Quantities of bottled milk are left at grocery stores, retail stores specializing in dairy products and other retail stores, which sell it mainly to nearby customers who call for whatever amounts they may at times require in addition to the milk regularly delivered from the milk dealer's wagons,



and in hot weather also to customers who lack refrigerator facilities and therefore purchase small amounts when they need them.

Direct marketing of market milk by dairymen is of greatest importance in the smaller towns and villages, and is somewhat less common in the smaller cities. There are some instances of direct retail milk deliveries in some of the large cities, but there the city milk dealers predominate. The methods and equipment of dairymen who sell milk direct to retail customers, vary extremely. A customer may be required to call for his milk at the dairyman's nearby farm. The dairyman may deliver afoot; or he may serve routes of considerable importance with wagons, touring cars or motor trucks. The surplus and shortage problems of the small dairyman who markets his milk direct to consumers is usually solved by selling his surplus milk at a nearby creamery or cheese factory, or by selling his surplus cream in bulk to ice-cream consumers and creameries or in bottles to his customers, and feeding his surplus skim milk to his stock; and by purchasing additional quantities from nearby farmers or possibly from other milkmen or dealers when his own supply is inadequate.

Most coöperative milk producers' associations do not market the milk of their members to retail customers, but concern themselves with the prices received from dealers and with other dealer arrangements such as collections, delivery methods, shipping points, and methods of hauling milk to shipping points, with the direction of milk shipments to dealers; with the disposition of the surplus, instead of depending upon dealers to find seasonal outlet; and with milk inspection. There are, however, instances of direct sale through coöperative organizations. Some of them retail milk to homes, make deliveries to retail stores, or maintain small city depots or stores without a retail delivery service, their customers receiving the milk at prices somewhat below the prices at which dealers or individual dairymen can operate delivery routes. In the city of New York, the Dairymen's League which has a membership of about 72,000 dairymen, has acquired the plant of a large wholesale milk dealer through which it has undertaken the wholesale distribu-

tion of market milk to hotels, restaurants and other consumers who purchase in wholesale quantities. The possibility of entering the field of direct marketing has stood various coöperative associations in good stead in their price negotiations with milk dealers.

**Grading and Inspection.**—No uniformity in the grading and inspection of market milk has been attained. In general two large classes of market milk are recognized in the larger cities; ordinary milk and graded milk. The former, which accounts for the greater part of the total supply, in turn may be either raw or pasteurized. Milk marketed direct by dairymen is usually raw while that retailed by dealers—especially by the larger city dealers—is more commonly pasteurized. Ordinary raw milk must conform to whatever standards may have been set by state statute as to percentages of milk fat and solids, cleanliness of milk and the health, feeding and care of dairy herds, and must also come within any city sanitary requirements that may be in effect and pass whatever state and city inspection services may be maintained. The actual effect of state and city requirements of course depends upon the effectiveness of inspection and the practice in this respect varies. In some cities a real inspection service is maintained while in many others, the enforcement of milk regulations is lax.

Graded milk, as distinct from ordinary raw or pasteurized milk, is variously divided into different classes. The term “certified milk” usually refers to milk produced under the supervision of a medical milk commission. At numerous milk markets arrangements have been made for the appointment of such commissions for the purpose of making frequent inspections of sanitary conditions, inspections of the health of employees, veterinary inspections and milk inspections, and to establish elaborate sets of rules under which certified dairy farms operate. In some cities unofficial certified milk, not sanctioned by medical commissions, is sold.

The term “inspected milk” has a less definite meaning than “certified milk.” It usually refers to raw milk of high quality that is produced under some form of current inspection and

under rules laid down by a commissioner of health but not under the supervision of a formally appointed medical commission. Miscellaneous grades of milks are offered for sale in various cities. Milk sold under the terms "Guernsey" and "Jersey" sometimes commands somewhat higher prices than ordinary market milk because of greater richness. Some dairymen sell so-called "baby milk," "modified milk" etc. as special brands intended for particular purposes. Different grading terms than those indicated above are used in some cities. Certified milk may be known as "AA" milk; and other grades may be designated as "A," "B," and "C" milk, the first two of which being intended for use as milk and the last two for cooking and manufacturing purposes.

**Market Milk Prices and Price Bases.**—In purchasing milk from dairymen, city milk dealers usually make the butter fat or Babcock test the primary and often the sole basis. Too little attention is in many cases paid to solids other than fat and to the cleanliness of the milk. Prices are frequently quoted on a standard butter fat test, with agreed additions or deductions for higher or lower tests. Additional tests are, however, made by dealers in various markets. An instrument known as a lactometer may be used to detect the presence of water and in estimating the amount of solids;<sup>2</sup> a sediment test may be made to determine cleanliness although the sediment test as it is usually made is not very accurate. Attention is usually paid to the odor of milk and the "appearance of the strainer cloth at the weigh can."<sup>3</sup>

Market milk which passes the butter fat test and such other tests as dealers may make, is usually purchased on either one of two quantity bases: (1) Much milk, especially in case of the smaller dealers, is purchased on the basis of weight. (2) Many dealers purchase market milk on the basis of cans holding a known number of gallons.

In most of the larger cities market milk is purchased by dealers under what is known as the "surplus plan" the follow-

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<sup>2</sup> *Marketing Milk in Wisconsin*, p. 18.

<sup>3</sup> *Ibid.*, p. 19.

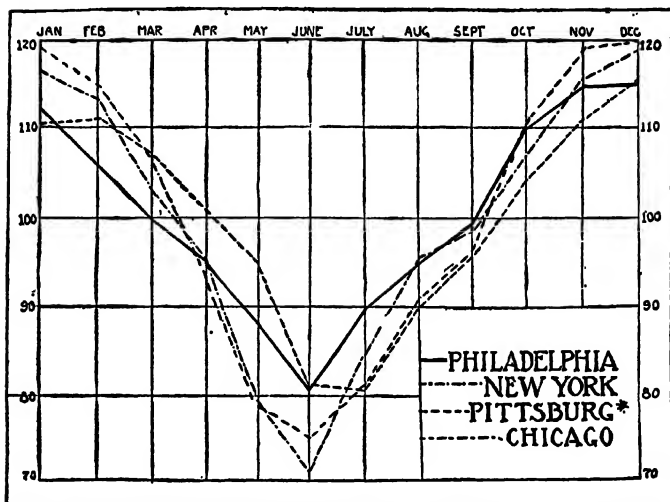
ing description of which is published by the Department of Agriculture: "An agreed price is paid for milk delivered by producers up to a certain amount, beyond which a lower price is paid for such surplus as may occur. At least two general plans are followed. In the first an average production is established for each producer, based usually upon his average for certain months in the fall. With this quantity as a base, a sliding scale of prices is worked out for milk in excess of this amount, due consideration being given both to the heavier production and heavier demand which occur at other seasons. In the other plan an endeavor is made to determine the actual surplus and pay accordingly. In order to do this dealers furnish audits of their business, showing disposition made of all milk received, and prices paid producers as based on such figures. Producers located in territories which are widespread and which include all types of dairy plants are leaning toward the adoption of a pooling plan in order that all producers shall share in whatever reduction in returns may occur due to surplus production."<sup>4</sup>

The price paid for market milk by dealers is seasonal in that during a given year it usually declines during the months of surplus production and increases during the months when production is falling off. Diagram No. XI shows the average fluctuations which occurred in Philadelphia, New York, Pittsburgh and Chicago during the nine years ending in 1916. Cost of production must in the long run influence milk prices in the sense that if prices are too low they will result in a decline in the amount of milk produced. Indeed the seasonal rise in prices of market milk during the autumn and early winter months is due in part to higher production costs. As the market milk trade is somewhat more local in character than the trade in milk products, dealers may be obliged to pay a substantially higher price for milk than is evidenced by the prevailing market for butter, cheese and other manufactured milk

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<sup>4</sup> E. W. Larson, L. M. Davis, C. A. Juve, O. C. Stine, A. E. Wright, A. J. Pistor and C. F. Langworthy, "The Dairy Industry," in *Year Book*, 1922, p. 383.

products. During the remainder of the year, however, and especially during the months of surplus production, market milk prices usually cannot vary widely from the prices paid for milk, cream or butter fat purchased by manufacturers of dairy products. As the prices which the latter pay are dependent largely upon the domestic and foreign market for butter, cheese, etc., it is manifest that the forces of supply and demand which influence market milk prices are not entirely



Reproduced from C. L. King, The Milk Price Situation in Philadelphia.  
\* For nine years ending Jan. 1, 1919.

DIAGRAM XI.—AVERAGE MONTHLY VARIATION IN AVERAGE ANNUAL PRICE RECEIVED BY MILK PRODUCERS IN FOUR MARKETS DURING TEN-YEAR PERIOD ENDING IN 1910.

local in character, but are to some extent national and international in scope.

Diagram No. XI also makes it clear that market milk prices are somewhat more subject to local conditions of supply and demand than farm products such as grain and cotton. The

price differences between the various milk markets are not maintained as accurately. The price variations shown are perhaps due in part to cost differences, but more largely to differences in local conditions of supply and demand and the ability to maintain distinctive milk price policies and price-making methods in different parts of the country. It should be noted, however, that the general trend of prices, although not precise, is similar in the various markets, principally because a seasonal fluctuation in production occurs in all of the areas from which they obtain milk, because some of the producers are so situated that they may ship to any one of several markets, and because the prices offered for milk, cream or butter fat in the alternative markets available to many dairymen—namely creameries, cheese factories, condenseries etc.—act as a general price governor or regulator of market milk prices. The former are usually somewhat lower than the price paid for market milk by city milk dealers but undoubtedly exert an influence upon them.

The methods of determining the prices paid by city milk dealers for market milk vary from the one extreme where the dealers arbitrarily name prices without regard to the producers views or wishes, to the other extreme where the dairymen acting in coöperation, dictate the prices to be paid for their product. The ability of dealers or dairymen to set prices in this way depends upon the prevailing relationship between supply and demand and in the latter case also upon the existence of a strong dairymens' organization. The position of the coöperative milk marketing associations is particularly strong if they enter the field of retail milk distribution or if there is a probability that they will take that step unless the dealers pay prices satisfactory to the dairymen. There have also been a number of "milk strikes" in some of the largest cities in the United States, the dairymen in several instances refusing to ship milk to the dealers until price concessions were obtained.

The tendency is to arbitrate market milk prices or to bring together the city dealers and dairymen in committees or conferences to jointly determine the prices to be paid by the dealers



in the light of seasonal variations in production, prices of manufactured dairy products, milk production costs and other factors referred to above. Milk prices determined in this way are the result of collective bargaining.

There has been a measure of public regulation of milk prices in some sections of the country. Reference is not had to the emergency measures of the United States Food Administration during the war but to efforts such as those of the states of Pennsylvania, Maryland and Delaware. Milk commissions were appointed in these states in 1916 and the result was the formation of a joint organization known as "The Governors' Tri-State Milk Commission." Later a milk price arbitrator was appointed in Pennsylvania. Public agencies of this kind have not attempted to fix milk prices but to obtain complete information as to the factors having a bearing on prices, to encourage economies in the market milk trade, to attend the milk conferences of dealers and dairymen and to "exert every effort to keep the market wholesome."<sup>5</sup>

#### MARKETING OF BUTTER

**Types of Creameries.**—The percentage of total butter output produced on farms has declined from 61.4 per cent in the Census year 1909 to 43½ per cent in 1919. A rapidly growing proportion consists of creamery butter which is manufactured in butter factories or creameries of which two general types are easily distinguishable,—“locals” and “centralizers.” The former obtain their supply of milk, cream or butter-fat from comparatively nearby farmers, nearly all of it being hauled to the local creameries by the farmers in wagons, touring cars or motor trucks. The centralizers are larger plants which obtain their supply from more than one community. In addition to local haulings, a centralizer may receive rail shipments from a radius of as much as 500 miles. Locals produce from about 50,000 to

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<sup>5</sup> C. L. King (former Chairman of Tri-State Milk Commission and Milk Price Arbitrator for Pennsylvania), *The Milk Price Situation in Philadelphia*, p. 19.

1,000,000 pounds of butter a year, while centralizers produce from 200,000 to 21,000,000 pounds in the course of a year.<sup>6</sup>

Local creamers from the standpoint of organization are of two types—individual or private and coöperative. The former are operated by private individuals, partnerships or companies, and the latter by coöperative associations or companies. Much the larger share of local production is by coöperatives, for in no large agricultural industry has coöperative effort been more successful than in the local creamery industry.

**Purchasing of Butter Fat from Producers.**—The raw material is delivered to creameries either in the form of whole milk or separated cream, the latter having become the most common practice in recent years. Private locals and centralizers usually purchase the milk or cream on the basis of butter fat at prices fixed by agreement or contract. Some private creameries, however, follow the practice of returning to the producers the average price received for butter with a deduction of a fixed charge of several cents per pound for manufacturing and some of them receive as compensation for the cost of manufacturing, the "overrun" or difference between the amount of butter-fat paid for and butter produced.<sup>7</sup>

The coöperative locals usually do not purchase raw material but receive it from their patrons with the understanding that the proceeds, or a portion of them, received from the sale of the butter will be distributed according to the amount of butter fat each has furnished. Expenses incurred in operating the creamery and marketing the butter are deducted from their sales receipts and additional amounts may be held back under instructions of the creamery management. Dividends may be paid on their capital stock. To the milk producer the coöperative creamery means that he does not receive fixed prices for butter-fat, but prices depending upon the net returns from the sale of the butter. Many of the farmers' creameries, however, are not purely coöperative and purchase milk or cream outright in the way that private creameries do.

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<sup>6</sup> Federal Trade Commission, *Milk and Milk Products*, p. 68.

<sup>7</sup> Department of Agriculture, *Bulletin No. 690*, p. 2.



Some creameries, recognizing the relation of poor cream to poor butter which sells at lower prices, have established grades for cream and pay a premium of several cents per pound of butter-fat for the better grades of cream delivered to them.

The expense connected with the delivery of cream or milk to creameries is paid in various ways. The producer pays it in many instances; in others the creamery pays it, and in still others there is a division of delivery expenses between producer and creamery. Many farmers haul their own milk or cream or enter into coöperative arrangements with their neighbors. Ultimately, the producer bears this expense, for if paid by the creamery in the first instance the prices for butter-fat or the proceeds received by the producer will be sufficiently lower to cover hauling or transportation costs.

The prices paid for butter fat by creameries which pay agreed contract prices are based on some large butter market as a buying basis. The most common wholesale butter quotations used for this purpose are those of New York and Chicago. Elgin quotations were frequently used as the basis before the Elgin Board of Trade ceased to function, and Boston, Philadelphia or San Francisco quotations are used by some creameries. Centralizer creameries consider the price paid for butter fat by the local creameries with whom they compete, and also the butter quotations of basic wholesale markets.

**Wholesale Butter Markets.**—The principal wholesale butter markets in the United States are Chicago, New York, Philadelphia, Boston and San Francisco. These markets are important not only because of the large quantities of butter which they receive, store and distribute, but because they are basic price markets. Their price quotations are followed in many other butter markets; they are used quite generally in purchasing butter from creameries, and as stated above the prices paid for butter fat by private creameries are usually based upon them. There are other wholesale butter markets of considerable importance. In the southern states, Norfolk, New Orleans, Richmond and Nashville handle substantial quantities of local as well as northern and western butter.

Elgin, Illinois was for many years a basic price market in the wholesale butter trade. It was at one time the real center of the creamery industry in northern Illinois. In later years little creamery butter was produced in the Elgin district, but the Elgin Board of Trade continued to operate primarily as an organization for establishing wholesale butter prices. A small number of persons interested in the operation of the Elgin board met there at noon every Saturday to transact a few sales and in that way establish an Elgin price quotation for the following week. The Elgin board gradually ceased to provide a real market and in 1917, during the war, was suspended through order of the Government.

**Butter Trade Agencies.**—Dairy butter is mainly consumed on the farms and sold directly to local retail dealers and nearby city consumers. No extensive trade organization is necessary in case of butter marketed in this way. Some of the dairy butter produced on farms is sold to local buyers who ship a portion of the amount handled by them to wholesale butter dealers or renovators at comparatively low prices.

The wholesale butter markets for the most part receive creamery butter which passes from the creameries to retail dealers and consumers through various channels:

1. The most common practice of creameries is to either consign butter to "receivers" or wholesale dealers or to contract with them for the sale of butter on an agreed wholesale market price quotation. The contract may be in written form, but written contracts are more commonly not entered into. Close business relations are, however, maintained so that the receiver generally knows from what creameries butter shipments will be received and the creamery management knows that it will receive payment on the basis of the quality of the butter and the wholesale market price quoted on an agreed market on the day the butter is received. Representatives of receivers frequently visit the creameries to solicit shipments. In the largest markets, wholesale receivers usually dispose of their butter stocks to jobbers in car lot or less-than-car lot quantities, but many

of them also conduct a jobbing business. In the smaller cities they more commonly act both as wholesalers and jobbers.

2. Some wholesale butter houses are known as commission firms although they differ but slightly from receivers or wholesale dealers. At one time they were actually commission men, but in later years this term in most cases became a fiction, for they virtually purchase butter outright from the creameries. Some of them continue to charge a commission for handling the butter shipped to them, but the net amount received by the creameries is not essentially different from what wholesale dealers pay, the apparent sale at prices above the market being counterbalanced by the commission charged against the creamery.

3. There are many butter jobbers who operate separately from the wholesale receivers and commission firms. They purchase most of their supply of butter from these primary wholesale agencies and distribute it to retail stores, restaurants, hotels and other available customers.

4. Many of the large creameries and some of the smaller ones distribute their output direct to retail dealers, hotels and other large consumers through branch houses or by contracting with distributing agents to represent them in certain territory. Exclusive distributing agents may receive a commission on sales, a salary or both salary and commission. Direct marketing is frequently accompanied by the establishment of private brands and sometimes by extensive advertising.

5. The large western meat packers utilize the local branch houses, through which much of their meat is distributed, for the distribution of large quantities of butter which they advertise under special brands. These packers, however, are also a special type of middleman in that they not only produce butter in lines of creameries but purchase much butter directly from other creameries and in the wholesale market. They distribute their output and purchases not only through their branch house but through the peddler-car system and other trade channels originally developed in the meat trade.

6. A small percentage of the butter received at the larger wholesale markets is sold on organized exchanges.

7. Miscellaneous trade channels or agencies include coöperative marketing associations acting as selling agents of local creameries; brokers who frequently represent wholesale dealers and jobbers in purchasing butter from creameries or other wholesale dealers; direct local sales by creameries to nearby retailers and consumers; direct sales for delivery by parcel post, express or motor truck concerns, and direct local sales by creameries to their own patrons.

**Butter Trade Organizations.**—The wholesale receivers of butter in some of the large butter markets are members of organized exchanges but, as stated above, comparatively small amounts of butter are sold on them. "Through such organizations, good fellowship is promoted and a meeting place or exchange room is maintained. At the meetings which are usually held daily and are known as the "call" or "change," sales are conducted. These sales are in the form of an auction and each member has the privilege of posting his offerings and bids or listing them with the official in charge. In order to facilitate trading between the members, rules and regulations have been adopted which provide (1) for the establishment of classes and grades of butter, (2) for an inspection service to apply these grades, and (3) for the adjustment of disputes in trading between members. Through the officers of the organization, information is obtained from members regarding the movement, prices, demand and supply of butter in other markets and receipts at the local market. They also obtain the benefits of coöperative action in matters which are of mutual interest such as state and city legislation, transportation and terminal facilities, and improvement of produce markets and marketing facilities."<sup>8</sup> There has at various times been some organized trading in future contracts or butter "options" on some of the exchanges, but future trading in the wholesale butter trade has never reached the important position which it has attained in the grain and cotton trades.

The most important butter exchanges are the New York Mercantile Exchange, the New York Butter and Egg Exchange,

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<sup>8</sup> U. S. Department of Agriculture, *Bulletin No. 456*, pp. 16, 17.

the Chicago Butter and Egg Board, the San Francisco Wholesale Dairy Produce Exchange, the Boston Chamber of Commerce, and the Boston Fruit and Produce Exchange. The membership of exchanges such as these includes not only dealers in butter, but usually also dealers interested in eggs, cheese, fruits and produce of various kinds.

**Grading and Inspection.**—The grading and market inspection of butter in the large wholesale markets is performed under the supervision of their organized exchanges. The exchange establishes the classes and grades of the market, lays down rules for drawing samples, and usually employs or appoints the inspectors to actually perform the grading service. In addition to these exchange inspectors, the United States Department of Agriculture also provides for butter inspections at New York, Chicago, Philadelphia, Boston, San Francisco and Washington. These government inspections are made upon application by persons interested financially in a given butter shipment. They are made under the United States food products inspection act referred to more fully in Chapter XVI. The principal purposes which the government hopes to accomplish is to gradually bring about a greater degree of uniformity in the commercial inspection of butter in the various wholesale markets and to protect interested parties from any injustices which may occur.

Butter is usually divided into various general "classes" as follows: (1) Dairy butter is butter produced on farms; (2) creamery butter is butter produced in a creamery or factory; (3) packing stock butter is dairy butter or other butter in its original form in miscellaneous lots of such wholesomeness that it may be used in making ladled or process butter; (4) ladled butter is made "by reworking miscellaneous lots of dairy butter or other butter or both;" (5) process or renovated butter is made by melting, refining and churning, or reworking packing stock or other butter or both; and (6) grease butter is "any butter which is unwholesome or otherwise unfit for use for ladling or renovating." These are the classes defined in the but-

ter inspection regulations of the Department of Agriculture and are generally recognized in the wholesale trade.

The wholesale trade also recognizes "grades" which, however, are not uniform in the various wholesale markets. The simplest method is "the score card method" under which a score made up of five factors is arrived at. Each factor is assigned relative maximum weights stated in terms of points as follows: flavor 45; body 25; color 15; salt 10; and package 5; a total maximum of 100 points. No grading terms are used, the quality being indicated in the resulting "score."

Although simple and easily applied, the unmodified score card method has the disadvantage of not taking into account market requirements and commercial standards to an extent satisfactory to the various agencies which comprise the different wholesale markets, and when attempted by the inspectors of different butter exchanges, results in a considerable lack of uniformity.<sup>9</sup> Commercial inspectors in the large wholesale markets usually employ the score card method only to determine the minimum scores which are laid down as requirements of the various grades and in some instances no minimum score is required. Each grade is given a definition in the rules of the butter exchange. The five factors in the score card are retained, but each is defined in the light of existing market standards and requirements. Under the rules of the New York Mercantile Exchange, for example, "Extras" are defined as "a standard grade of average fancy quality in the season when offered under the various classifications. Ninety per cent shall conform to the following standard; the balance shall not grade below firsts:

*Flavor.*—Must be sweet, fresh and clean for the season when offered.

*Body.*—Must be firm and uniform.

*Color.*—Not higher than natural grass, not lighter than light straw, but should not be streaked or mottled.

*Salt.*—Medium salted.

*Package.*—Sound, good, uniform, and clear."

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<sup>9</sup> U. S. Department of Agriculture, Service and Regulatory Announcements, No. 51, The Inspection of Butter Under the Food Products Inspection Law, p. 11.

In finally arriving at this grade the butter is also scored on the basis of points, for the rules of the exchange provide that "extra creamery may score either 91, 92, or 93 at the discretion of the butter committee, who shall determine the required score from time to time in such manner that it shall represent an average fancy quality in the season when offered. But butter scoring more than required for extras shall be delivered on a contract for extras, and may be branded as such at the request of seller or buyer."

In some of the less important wholesale markets the score card method is largely ignored, the various grades being loosely defined without a minimum score. Grades assigned by inspectors in such markets are likely to be confusing to persons not closely connected with them. The grading practice in the larger markets is a combination of this method and the score card method.

The grading terms in use are not entirely uniform. The Chicago and Philadelphia grades are as follows: Extra, extra firsts, firsts, seconds and thirds. The New York Mercantile Exchange grades and the grades recognized in Boston are the same except that extra firsts are omitted; the New York Butter and Egg Exchange defines grades for specials, extras, firsts, seconds and thirds; and the San Francisco Wholesale Dairy Produce Exchange, for extras, prime firsts, firsts, seconds and thirds. The definitions and scores may vary somewhat in the different wholesale markets.

The method of inspection of the Department of Agriculture is based largely upon the grading methods practiced in the large wholesale markets but differs from them in that in case of butter other than ladled, packing stock and grease, each score constitutes a grade under the government's method while under the rules of the exchanges a grade may include more than one score. The governments' inspectors rate dairy, creamery and process or renovated butter in terms of points or defined scores instead of grades and issue inspection certificates stating the score and also "whether the color is light, medium or high, whether the butter is unsalted, medium or high salted,

and the nature and extent of any defects in flavor, body color, salt or package." Ladled and packing stock butter is graded in terms of three numbered grades, but when moldy is inspected without designation of grade.

Much butter received at the wholesale markets from creameries is not officially graded and inspected under the rules of the exchanges, when purchased by wholesale receivers. The receivers may themselves judge the quality of the butter and dispense with the services of an exchange inspector. Some butter, however, is officially graded and inspected as it is received by members from creameries, and butter sold on the exchange is usually bought subject to official inspection. In the former case, exchange inspection is more common when prices are low or are declining than when they are high or advancing. When dissatisfaction with this practice arises in the larger markets the dissatisfied party may now obtain an inspection by inspectors who are appointed by the United States Department of Agriculture.

The grades assigned by exchange inspectors are more important in the establishment of butter price quotations than in the actual purchase and sale of butter. They make possible the announcement of wholesale market price quotations for butter of different qualities and these quotations are a factor in wholesale butter transactions even in the case of butter which is not officially graded and inspected. They usually constitute the price basis in the agreements or contracts under which creameries ship butter to wholesale receivers, and under which they purchase butter fat from the dairymen.

**Butter Price Quotations.**—The official price quotations announced at the various wholesale markets are determined by four principal methods.

1. Those of the New York and Chicago markets, which are most commonly used as a price basis, are published by commercial reporting agencies. Market reporters not only attend the sessions of the exchanges but circulate among wholesale butter dealers to record the prices at which butter of different



grades is selling in private transactions and generally estimate the tone of the market.

2. In some markets the official price quotations are established and announced by exchange committees who consider bids and offers, sales and the general tone of the market. This method has however, at times aroused the suspicions of the public and various quotation committees have been prohibited by court orders.

3. Somewhat similar is the plan under which a vote is taken at the close of each day by the members of the exchange as to the official quotation for the day and the tone of the market.

4. In certain markets official quotations have been established as the result of exchange sales, either the closing sales or the range of the majority of sales on the exchange during the day being accepted. This method likewise, has not met with favor because exchange sales usually constitute but a small percentage of the total sales made in the wholesale markets.

Although the commercial reporting method in the two principal markets results in official quotations which are widely accepted in the wholesale butter trade, it should be noted that wholesale butter price quotations and market reports are also published by the Department of Agriculture in both of these markets and also in Philadelphia, Boston, and San Francisco. These federal price reports serve as a check upon the quotations established by commercial reporters or exchanges and are in some instances used as the price basis for butter transactions.

**Butter Prices.**—In discussing the prices paid for market milk, comparisons were made with the prices of butter and mention was made of the influence exerted by the use of vast quantities of milk in creameries, which constitute an alternative market for many dairymen. Aside from general commodity price factors such as money and credit inflation, the factors which do most to determine butter prices are the amount of production and the prevailing conditions of demand. The production of butter is seasonal because it depends upon milk production. The season of surplus butter production usually begins about April 1st, and ends about September 1st. Con-

sumption on the contrary, although somewhat uneven during the year, is decidedly less seasonal in character and the result is that much butter is placed into cold storage by wholesale dealers and others for gradual distribution during the months of low production. The general relationship between production and wholesale butter prices in Chicago and New York are shown in diagram No. XII. During a given year prices gen-

**WHOLESALE PRICES OF 92-SCORE BUTTER AT NEW YORK AND CHICAGO AND CREAMERY BUTTER PRODUCTION, 1921.**

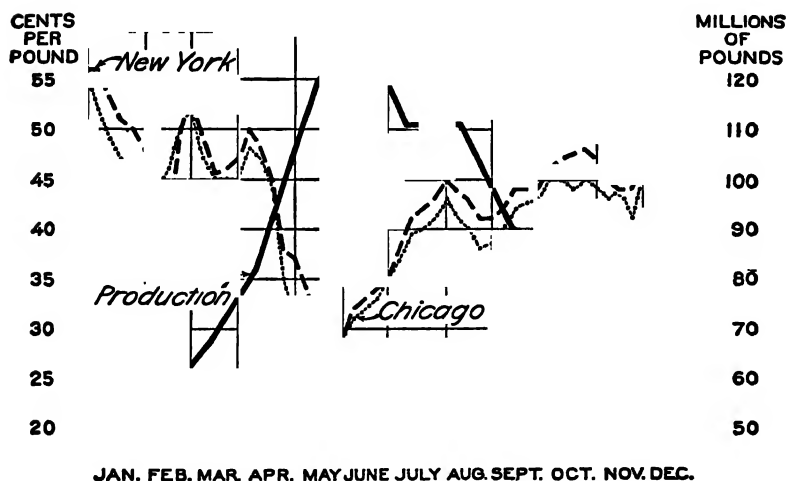


DIAGRAM XII.

erally, although not with definite precision, move inversely with production. Storage, during the surplus months, tends to equalize butter prices somewhat.

The demand for American butter in the wholesale markets where the basic prices are determined, depends mainly upon current consumption in the United States and upon the holdings of butter in storage which are not reported currently by the Department of Agriculture; but it is also international in scope, for substantial quantities have been exported in recent

years.<sup>10</sup> The supply of butter received at the wholesale markets of the United States also depends mainly upon domestic production, but is supplemented by imports from abroad. During the war years 1914 to 1919 exports of butter exceeded imports, while since then, imports have been greater than exports.

Wholesale butter prices in the principal markets fluctuate with a greater degree of uniformity than was noted in case of market milk prices because the wholesale butter trade is less local in character. Although market differences not trace-

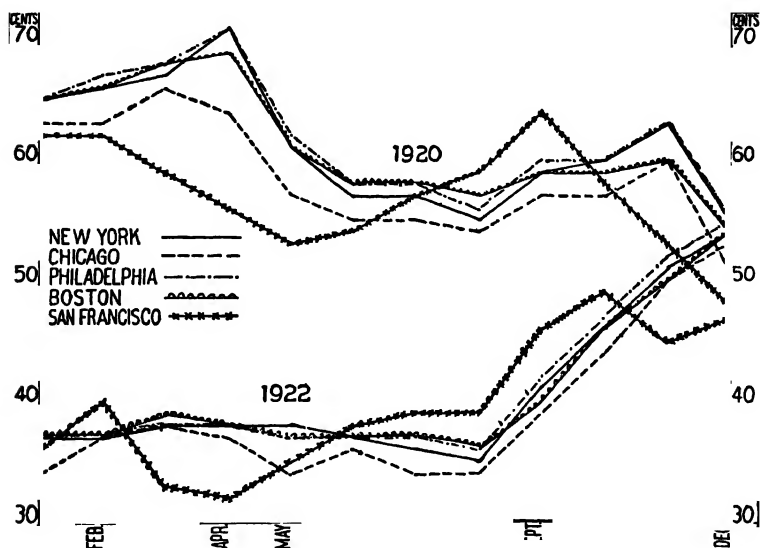


DIAGRAM XIII.—MONTHLY AVERAGE PRICES OF 92—SCORE BUTTER AT FIVE WHOLESALE MARKETS.

able to transportation and marketing costs or quality differences occur at times, intermarket shipments can be readily made and when the prices in a particular market are comparatively too high or too low, the movement of butter to or from such market tends to bring them back into line. The monthly average prices of 92-score butter at five markets during two

<sup>10</sup> See Chap. XXI.

years of high and low prices respectively are shown in diagram No. XIII.

Aside from the principal factors affecting the general movement of wholesale butter through different months of the year, other price factors may be summarized as follows: (1) Cost of production in the long run influences butter prices as it also does the price of milk. The influence, however, has been indirect in that the creameries do not set their own prices on the basis of costs, but receive the prevailing wholesale prices which are governed mainly by production and demand. Their production costs when high, are constantly urged by them as a justification for a price advance, and if disregarded entirely would eventually result in a falling off in production. (2) Transportation and marketing costs are factors in wholesale butter prices principally in the effect they have over the price differences obtaining between the various markets. (3) Shrinkage during shipment and storage is a cost factor which affects either prices or net profits. (4) Wholesale prices vary according to the quality of the butter, although the relationship may not always be exact.

**Jobbing and Retail Prices.**—In addition to the wholesale prices received by creameries from receivers and the wholesale prices at which the receivers resell butter in wholesale quantities, there are the jobbing prices at which butter is sold to retail dealers and the retail prices paid by consumers purchasing in the retail trade. Jobbing prices and retail prices, although based upon wholesale butter prices and following their general trend, fluctuate less frequently. Retail prices, particularly, do not respond so quickly to changing conditions of supply and demand, and it is not necessary that they should follow all the smaller fluctuations in the wholesale trade, because retail price margins are comparatively wide. There is, moreover, nothing approaching a general retail price for butter in the larger cities. Butter is retailed by large numbers of grocery stores, chain stores, stores specializing in dairy products, public markets, wagon retailers etc., and the prices charged by them and their price margins are by no means uniform. The connection between

quality and retail prices, also is less definite than in the wholesale trade. Butter is usually not retailed in terms of grades or scores. Much is sold in prints or special consumers' packages under advertised brands, and butter retailed in bulk is often sold merely as butter. Marked differences in quality are reflected in retail price differences, but much butter of medium or good quality may retail at prices which do not reflect differences in quality.

### MARKETING CHEESE

The trade organization and commercial practices prevailing in the cheese industry are in many respects similar to those described in connection with the marketing of butter, but their main features may advantageously be referred to separately.

Nearly all cheese factories are local establishments because cheese is made from fresh milk. This is particularly the case in the production of the "American" or brick types of cheese which predominate in the cheese industry. The factories are either privately owned or coöperative. The latter have become very important in the principal cheese producing states, and they are even more prevalent in the districts where foreign types of cheese are produced than in the American or brick cheese districts. Many of the coöperative factories are coöperatively owned but operated privately.

American or brick cheese is usually sold by the factories to nearby cheese dealers, and the warehouse system prevails. The cheese is shipped from the factories to dealers' warehouses located at various points throughout the main producing districts, and there it is weighed, paraffined and boxed and is then shipped to the dealers' customers or is stored for shipment in the future. The customers of the dealers include wholesale grocers, wholesale distributors specializing in dairy products, large retail buyers, exporters, etc. Selling prices are usually wired to their customers and the orders as they are received are filled out of the cheese available in the warehouses or that which will be received from the factories during the week. The customers may request that the cheese purchased by them be shipped

direct or that it be placed in storage in the dealer's warehouse or in warehouses located at more centralized points.

Some of these dealers are affiliated with the western meat packers or other large distributors of American cheese, in which case they may be acting as brokers, instead of buying and selling cheese on their own account. The large meat packers distribute cheese as well as butter through the various trade channels which they developed originally for the distribution of meat and meat products.

In the large wholesale markets for cheese which are the same as for butter, there are wholesalers who purchase great quantities from the cheese dealers located in the vicinity of the cheese factories. They also send their own representatives to the country districts to purchase direct from the factories and in that way constitute an additional outlet for the producers of American cheese on the large wholesale markets. There are, moreover, various commission merchants who distribute cheese on a commission basis. Here also are found a number of jobbers who either purchase cheese from the wholesalers for distribution to the retail trade and to large consumers; or they may act in the capacity of a wholesaler and purchase their supply from dealers or cheese factories. Several large coöperative marketing associations have been formed by the federation of many coöperative cheese factories. Dealers, wholesalers, etc., make their purchases from the federations instead of from the local coöperative factories, and where practicable, the channels of distribution are made somewhat more direct by eliminating some of the usual wholesale middlemen. The federations have, however, for the most part distributed cheese through the regular wholesale trade channels.

The foreign types of cheese and other special types are more commonly "handled in the larger markets by dealers who specialize in such types and the dealers may have direct connections with country buyers or may maintain their own branch in the country. Such dealers are jobbers as well as wholesalers, supplying grocers, delicatessen stores, hotels, cafes, etc. They

handle both domestic and imported goods of the foreign type, as well as domestic soft cheeses.”<sup>12</sup>

The prices received by the factories are in many cases based on weekly “cheese-board” quotations, these boards being primarily maintained for this purpose. They are local exchanges where certain quantities of cheese are sold at auction to the highest bidders. Formerly many boards were located in Wisconsin and New York State, but recently but two have been active. They are at Plymouth, Wisconsin and both meet on Monday of each week to establish basic prices for various types of cheese on the basis of such trading as may take place. As the New York state cheese boards are no longer active, the prices of cheese received by factories in that state are in many instances based upon the current wholesale prices of the New York City market as they are reported by a trade paper and in the market news service of the Department of Agriculture.

The factors influencing cheese prices are similar to those which govern the prices of butter. The seasonal range however, is somewhat less than that for either butter or milk. “Before each seasonal decline, when the new crop is coming into the market, from February to June, the market is usually ragged with some secret cutting of prices and exporting on consignment by dealers who want to get out before the decline. When the decline in the price of new cheese comes, the remnant of the old crop usually sells at a premium of from 1 to 3 cents. By September the premium has disappeared. From November to May the spread between New York prices on fodder cheese and prices in primary or country markets is frequently several cents. During the grass season the spread is very small.”<sup>13</sup>

#### MARKETING MANUFACTURED MILK

In discussing the distinctive feature of the trade in manufactured milk, evaporated and condensed milk may be taken as the basis because they constitute the bulk of production.

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<sup>12</sup> Department of Agriculture, *Year Book*, 1922, p. 364.

<sup>13</sup> War Industries Board, *Prices of Poultry and Dairy Products*, p. 25.

The prevailing methods of marketing these products are more like those found in the canned vegetable trade than in the milk, butter or cheese trades. Condensed and evaporated products are essentially manufactured products rather than farm products or products produced mainly in local plants which are closely connected with the dairy industry. The manufacture of canned milk is in the hands of a limited number of manufacturing companies, some of which operate very large establishments. From 65 to over 76 per cent of the country's entire output has in recent years been produced by ten companies,<sup>14</sup> and some of these concerns have agreements under which they control and market the output of other condenseries. There have even been international agreements between large companies governing the distribution of canned milk in the United States and in foreign markets.

The large manufacturers of canned milk maintain complete sales organizations. They have sales branches and stocks in warehouses at the principal distributing centers and points of export, and they send salesmen direct to retail dealers to sell condensed and evaporated milk packed in sealed tins, and to ice-cream manufacturers and bakers to sell their products in bulk. They sell well established brands under their own labels and trade marks and finance national advertising campaigns. They do not however sell their entire output direct to retailers and large consumers. They depend to some extent upon wholesale grocers to whom they may sell direct or through brokers. They may also send their salesmen with the salesmen of the wholesale grocers to the retail dealers so as to promote sales. The number of retailers who handle canned milk is legion, for it has become a regular grocery item, and all of them are not reached through the sales organization of the large condenseries. It is mainly the larger retailers such as the chain stores which habitually purchase many of their supplies without the services of the wholesale grocer.

Some of the smaller manufacturers also make sales direct to retailers, ice-cream manufacturers and bakers, but they are as a

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<sup>14</sup> Federal Trade Commission, *Milk and Milk Products*, p. 57.



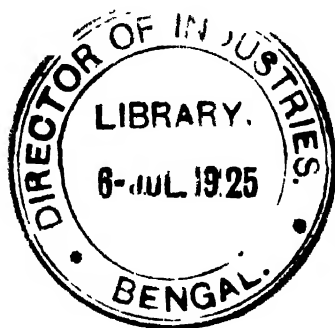
rule more dependent upon brokers to find outlets and upon wholesale grocers who do most of the jobbing in the canned milk trade. The product of the smaller condenseries is not so well known to consumers and is frequently sold somewhat under the prices of the much advertised brands. Some canned milk is sold under the labels or trademarks of wholesale grocers and chain stores which may contract with condenseries to pack their output so that it may be sold as a private brand.

When selling to wholesale grocers or other jobbers, manufacturers of canned milk for some years guaranteed them against price declines. When the manufacturers reduced prices after jobbers had made purchases they would rebate to them the difference between the reduced prices and the prices paid for unsold stocks of milk. Some of the manufacturers objected to this guarantee and the Federal Trade Commission in December, 1918 began proceedings on the ground that it constituted an unfair method of competition. A large group of companies then proposed a modified sales method under which the price guarantee to jobbers is limited both as to time and amount of milk. The limited system of price guaranty went into effect in March, 1919, and with minor modifications is now employed by many of the companies.

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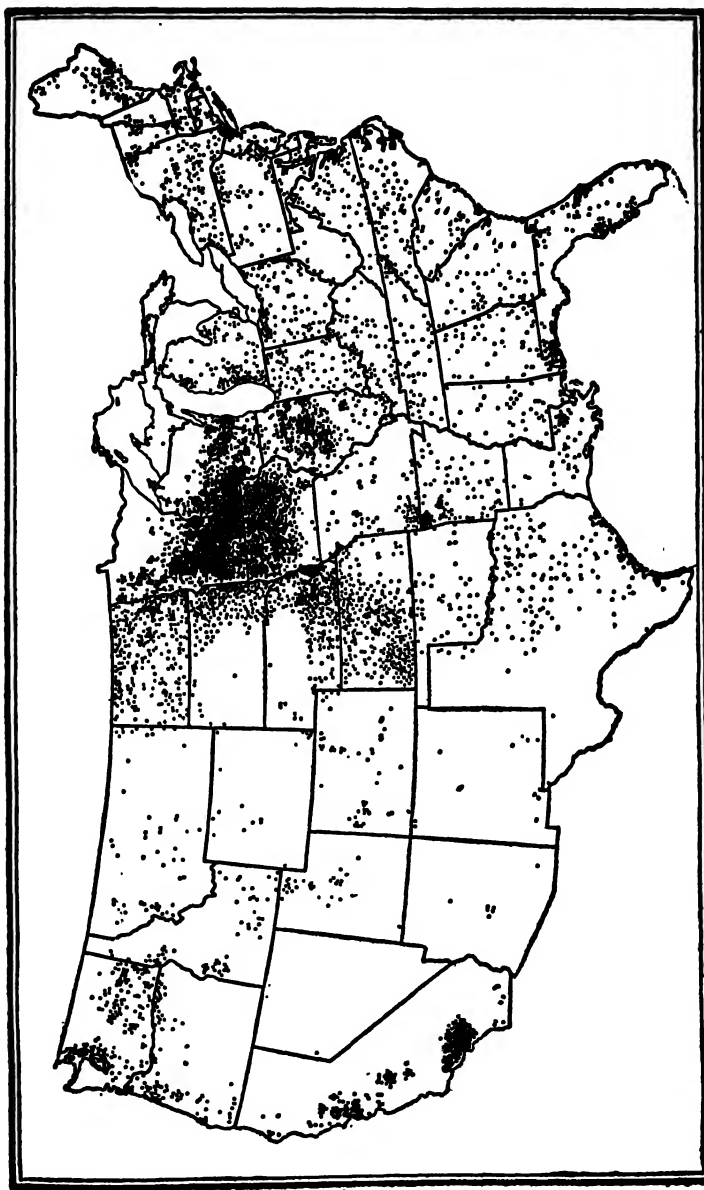
## CHAPTER XV

### COOPERATIVE MARKETING

**Growth and Extent.**—The coöperative marketing activities of growers referred to repeatedly in connection with the various agricultural trades described in earlier chapters has in recent years become an important factor in the distribution of many kinds of farm products. Various coöperative farmers' organizations were organized in the United States in the latter part of the eighteenth century and the movement toward the establishment of coöperative purchasing associations and coöperative stores became quite active about 1850, but it was not until the westward immigration of population following the Civil War that the coöperative movement became widespread throughout the Middle Western States.

So many of the coöperative enterprises organized by farmers in subsequent years were unsuccessful that doubt was frequently expressed as to the part that coöperation would play in the marketing of farm products. The movement had its ups and downs. Many associations were organized in various parts of the country during periods of low prices, and in producing regions so far removed from their principal markets that shipping and marketing expenses normally constituted a highly important factor in the net profits of the growers. Knowledge gained from experience, moreover, slowly resulted in an increasing number of successful coöperative enterprises which served as guides to groups of farmers located elsewhere or engaged in the production of different crops.

In later years the number of coöperative farmers organizations in the Middle West increased enormously and marketing and shipping associations were organized in various parts of the far western states. Many have also been organized throughout the



Prepared by U. S. Department of Agriculture.

MAP XXII.—COOPERATIVE MARKETING ASSOCIATIONS.

South and East, even in producing regions adjacent to the large wholesale markets.

Complete data as to the extent of coöperative marketing is not available, but the associations listed in map No. XXII by the Department of Agriculture in 1917 conveys a general idea of the regions in which they are most prevalent. The map shows only the 5,424 associations reporting to the Department, which estimated that at that time about 12,300 coöperative farmers associations were performing marketing functions of some description.<sup>1</sup> In 1919 the Bureau of the Census reported that farm products valued at \$721,984,000 were sold through farmers organizations and that coöperative purchasers amounted to \$84,616,000. These estimates in the light of other available but incomplete data, were probably too low.<sup>2</sup> It is certain that the break in agricultural prices since 1920 has increased the number of coöperative marketing associations in various parts of the United States.

The coöperative movement, in so far as it concerns some degree of marketing farm products, includes grain elevators, creameries and cheese factories, fruits and produce, cotton, leaf tobacco, live stock, milk, eggs, wool, rice and to a smaller extent other farm products; many coöperative stores where a variety of products are purchased and sold; a limited number of associations, other than creameries and cheese factories, which produce or manufacture as well as market products such as fruit and vegetable creameries, vinegar plants and a few meat packing plants. Coöperative organizations connected with the marketing of farm products, although not handling them in every instance, also include coöperative warehouse companies and coöperative loaning or financing associations, some of the latter having been organized even before the enactment of the Federal Farm Loan and the Agricultural Credits Acts made coöperative credit associations a part of the credit machinery created by the Govern-

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<sup>1</sup> Bulletin No. 547. More recently the Department estimated that the directory which it is preparing will contain the names of about 16,000.

<sup>2</sup> Prof. B. H. Hibbard in "*Marketing Agricultural Products*" estimates total sales through farmers' organizations at approximately \$2,000,000,000.

ment. The coöperative movement in a larger sense is not limited to marketing functions. There are many coöperative laundries, farmers' mutual insurance companies, telephone companies, cow-testing associations, live-stock breeders' associations and purchasing associations. Supplies of many kinds are, of course, in many instances purchased through coöperative marketing associations as well as through special purchasing associations. Some of the larger general farmers' organizations which encourage the organization of coöperative enterprises have also at times adopted extensive political, educational and social programs.

**Conditions Favorable to Coöperative Marketing.**—Although there are instances where coöperative marketing associations have been organized without the spur of necessity or of real or fancied grievances to be overcome, it is certain that dire necessity has often been the occasion for and has greatly stimulated successful coöperation. More specifically, the occasion which has caused farmers to organize effectively has variously been periods of low agricultural prices, wide local or central market price margins and low net farm prices, lack of effective local competition, difficulty in finding markets, especially for perishable products, wide spreads between carload and less-than-carload freight rates, and great distances between producing regions and central markets.

Whether or not a given coöperative marketing association is traceable to necessity or grievances, there are other conditions which make for its successful operation. It is essential that the association have a sufficient volume of business to make it profitable. A coöperative association is similar to a strictly private dealer in this respect. Unless its volume of business is adequate it cannot provide competent management and an adequate business organization to properly keep in touch with market conditions, keep accurate records and accounts, inspect packing and grading and perform other essential parts of the association's business. It may also experience difficulty in financing all of its transactions because of insufficient volume of business or its manager may be so incompetent as to mismanage its financial

affairs and marketing activities. Volume of business alone is, however, not a panacea. There must in addition be a willingness on the part of the association to make a sufficient outlay to assure competent management.

Other conditions which have shown themselves to be favorable to successful coöperation include a reasonable concentration of production geographically so that most of the members reside in one general community. Stability of the agricultural population is highly desirable if not essential, for if the farms in a community are operated mainly by short-time tenants the association's membership is likely to be fluctuating and difficult to hold to an agreed marketing policy. Similarity in views, habits, nationality and other characteristics of the association's members may also at times be a factor in successful coöperation, but they are less important than common economic needs and a reasonable degree of business intelligence. Competent leadership is always essential, and it is desirable that the board of directors consist of farmers in whom the members have confidence and who will devote the time necessary to direct the association's affairs and actively support the efforts of its business manager. Even then the coöperative enterprise will not be successful should disloyalty develop on the part of its members.

**Types of Coöperative Marketing Associations.**—The term coöperative marketing association has been used in this discussion because that is the term most commonly applied to organizations through which farm products are distributed coöperatively. It does not follow that they may not be incorporated companies or corporations, as indeed most of them are. In general there are two types of so-called associations,—noncoöperative capital stock companies and coöperative organizations.<sup>3</sup> The former are incorporated companies which distribute their profits by means of dividends on capital stock and according to the amount of capital invested. They are organized as are any other business corporations, without limit as to the number of shares of capital stock one person may own or the number of votes one stockholder may have, other than the number of shares owned by him. "In the

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<sup>3</sup> U. S. Department of Agriculture, *Bulletin No. 547*, p. 3.

truly coöperative organization the financial interest of each member is limited, each member has the same voting power, and savings are distributed by paying a fair rate of interest on the capital invested, and by distributing any further savings in the form of a patronage dividend, proportioned on the amount of business transacted with the organization.”<sup>4</sup>

Coöperative organizations conforming to the principles of true coöperation may be organized either on the capital stock plan or as nonstock companies or associations. They may, moreover, be either incorporated companies or unincorporated associations. The great majority of them are incorporated and many are organized on the capital stock plan.

Thirty-five states have enacted laws especially providing for the formation of coöperative organizations. Some of these statutes expressly authorize the formation of unincorporated associations, but such organizations are more commonly formed under the common-law right of contract.

The prevailing form of organization in the future may be influenced somewhat by recent federal legislation. The Clayton Act of 1914 which sets aside the Sherman Anti-Trust Law under certain conditions, expressly states one of these conditions to be that the exempted farmers' organizations may not have capital stock and another that it shall not be conducted for profit. The Capper-Volstead Act of 1922 authorizes coöperative marketing associations of producers, “corporate or otherwise with or without capital stock,” provided they are operated for the mutual benefit of their members and conform to one or both of the following requirements: “First, that no member of the association is allowed more than one vote because of the amount of stock or membership capital he may own therein; or, second that the association does not pay dividends on stock or membership capital in excess of 8 per cent per annum.” To come within this act, moreover, a coöperative association may not “deal in products of nonmembers to an amount greater in value than such as are handled by it for members,” and any acts on its part to monopolize or restrain trade in interstate or foreign commerce

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<sup>4</sup> *Ibid.*



so as to increase prices unduly are subject to supervision by the Secretary of Agriculture. Recent federal income tax laws have imposed certain requirements on coöperative marketing associations, failure to comply with which result in loss of exemption from taxes.

Coöperative marketing associations may be further classified, on the basis of their affiliations, into individual associations and federations. Many coöperative marketing associations, are not affiliated with others for marketing purposes and many of them are strictly local organizations which operate in particular localities. Others, however, are federated in such a way that their selling activities are controlled or actively performed by a central organization serving as selling agency for a number of local associations. The central organization may also handle collections, clear accounts, obtain the necessary market information, determine the markets to which shipments are made, control shipments made by the local associations, endeavor to obtain improved transportation services and favorable freight rates, determine price policies, handle the work of advertising, keep the organization informed as to legislation affecting the industry and assist in the standardization of products and packing, in providing storage facilities and obtaining new members for the local associations. In case the various local associations pool their shipments, the central organization may also manage the pools. The local associations in a federation of this kind attend to the preparation of the products for shipment, order cars from the railroads and ship them as directed by the central organization or exchange. The division of work between local and centralized associations, however, is not uniform. In some federations each local association retains its sales organization and determines its own sales policy. The business organization of federations also varies, local associations in some instances being federated into district organizations or exchanges and these in turn into a central organization or exchange.<sup>5</sup>

**Activities of General Coöperative Organizations.**—Although the coöperative marketing associations referred to sometimes per-

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<sup>5</sup> See Chap. XIII, pp. 314, 315.

form the general social function of creating a community spirit, they are primarily business organizations and are distinguished from certain large general farmers' organizations which may also undertake specific marketing activities but which are primarily interested in fostering the coöperative movement and in performing educational, social and political functions designed to improve the condition of the farming population. Organizations of this general type include associations such as the Grange or Patrons of Husbandry, the American Society of Equity, the National Agricultural Organization Society, the Non-Partisan League, the Farmers Educational and Coöperative Union and The National Board of Farm Organizations. There have in the past been various other organizations of this general type which have discontinued operations; the Farmers' Alliance was at one time an influential farmers' organization.

The activities of all general farmers' organizations are not uniform and the programs for which they stand vary, but they may in general be grouped as follows:

1. They encourage the organization of coöperative marketing associations and other coöperative enterprises by educating farmers to the advantages of coöperation, by arousing the interest of farmers, and assisting in the preliminary work of organization.

2. Most of them have in various ways engaged in political activities. Their political programs and the methods used to obtain their purposes vary. Some of them have taken an active part in state and national elections, while others confine themselves to placing their programs before the farming population and urging support of, or opposition to, bills introduced in Congress or State legislatures. Their programs have varied everywhere from the conservative to the extremely radical. Some of the legislation which had the support of one or more general farmers' organizations includes the oleomargarine law, the pure food law, agricultural credits and federal farm loan acts, public regulation of railroads and grain elevators, future trading laws and legislation creating the parcel post, rural free delivery and postal savings bank services. The Non-Partisan League is

typical of the more radical farmers' movements. Its program specifically includes state ownership of terminal elevators, packing houses, flour mills and cold storage plants; exemption of farm improvements from taxation; state inspection of grain and grain dockage—the one part of its program which is in line with the existing practice of many states—state hail insurance, and state credit banks operated at cost as a source of rural credits.

3. Some of these general farmers' organizations have endeavored to provide for the social and educational needs of the farming communities. The Grange began primarily with a general program of this kind but it has also in later years taken an active interest in coöperative business enterprises and political matters.

4. Some of the general farmers' organizations have at various times embarked into business. They have variously undertaken the actual organization and operation of coöperative marketing shipping and purchasing associations, coöperative stores, creameries, cheese factories, warehouses and elevators and telephones. Their more common policy, however, is to encourage the organization of independent coöperative associations; of the total number of coöperative business enterprises in the United States comparatively few are owned or operated directly by the large general farmers' organizations.

A unique organization not easy to classify, because it differs from other general farmers' organizations in certain respects, is the American Farm Bureau Federation which was the outgrowth of the system of county agents who are employed jointly by the federal government, the states and the counties, and of the county farm bureaus to whom the county agents report. Many of these county farm bureaus were formed into state federations, which in turn organized the national organization known as the American Farm Bureau Federation. It differs from other general farmers' organizations in that its program has thus far been primarily economic. Although its program is partly educational and political, its efforts have been directed mainly to the solution of marketing problems. Believing that each commodity requires a separate marketing organi-

zation, the federation is attempting to formulate coöperative plans on the commodity basis. Its purpose, whenever necessary, is to extend coöperative marketing beyond the local market or shipping point to the central market or wherever in its judgment the greatest advantages may be attained. It has also announced as part of its economic program the desire to eliminate sharp price fluctuations by regulating the movement of a given crop in accordance with careful estimates of available world supply; to establish a larger export market for surplus American farm products; to reduce distribution costs and limit dealers' profits in case of crops not marketed coöperatively; and if possible to reduce production costs and provide cheaper sources of fertilizer.

**Public Agencies Promoting Coöperative Marketing.**—Coöperative marketing organizations are subject to public regulation, but the manner and degree of such regulation is somewhat different than in the case of industrial combinations, and federal and state legislation has also been enacted to encourage farmers' coöperative associations. The Clayton Act declares that agricultural or horticultural organizations shall not be construed to be illegal combinations or conspiracies in restraint of trade under the anti-trust act if they are organized for the purpose of mutual help, have no capital stock, are not conducted for profit and do not restrain "individual members from lawfully carrying out the legitimate objects thereof." The Capper-Volstead Act specifically authorizes "producers of agricultural products as farmers, planters, ranchmen, dairymen, nut or fruit growers to act together in associations, corporate or otherwise, with or without capital stock, in collectively processing, preparing for market, handling, and marketing in interstate or foreign commerce, such products of persons so engaged," subject to certain conditions referred to above and supervision by the Secretary of Agriculture as to their price policies. The federal income tax law exempts "farmers', fruit growers' or like associations, organized and operated as sales agents for the purpose of marketing the products of members and turning back to them the proceeds of sales, less the necessary selling expenses, on the

basis of the quantity of produce furnished by them; or organized and operated as purchasing agents for the purpose of purchasing supplies and equipment for the use of members and turning over such supplies and equipment to such members at actual cost, plus necessary expenses." The grain futures act specifically takes coöperative grain associations into account by proving that exchanges in order to be classified as "contract markets" must admit representatives of financially responsible coöperative associations of growers into membership.

Statutes have also been enacted in various states providing that the anti-trust laws of the state shall not apply to farmers' coöperative associations, or that associations incorporated under the law in which this exemption is made shall not be subject to the anti-trust laws of the state. Mention has already been made of state incorporation laws especially applicable to coöperative associations and state laws expressly applicable to the organization of voluntary, unincorporated associations.

Coöperative marketing has also been promoted or assisted by government departments and bureaus. The United States Department of Agriculture has aided the coöperative marketing movement by arranging for personal visits to organizations and communities where the formation of coöperative associations was contemplated, by making recommendations as to methods and forms of organization, by suggesting forms of by-laws, by providing accounting systems for associations handling different kinds of farm products and assisting in installing them, and by giving advice as to methods of financing associations. The department has also assisted in a more general way by making studies of various problems of coöperation. The Bureau of Agricultural Economics has recently been making studies of the economic significance of agricultural coöperation, the legal phases of coöperation, and the current and historical data needed to provide a record of the farmers' coöperative organizations which have been formed in the past and those now in existence in the United States.

Assistance has likewise been rendered to coöperative marketing associations by some of the states through their departments

of agriculture or departments of marktes and through their agricultural experiment stations and state agricultural colleges. Many coöperative associations and groups of farmers wishing to be organized have been assisted by the jointly maintained county agents who are located in agricultural counties throughout the country.

**Functions and Advantages of Coöperative Marketing Associations.**—The primary function of most coöperative marketing associations is the distribution and sale of the products of their members. There are however, widely varying degrees of coöperation in the sale of farm products. In one case the association may accomplish direct marketing to the fullest extent, the products of its members being sold direct to consumers. In another instance the local middleman and some of the wholesale middlemen at the central markets may be eliminated, no effort, however, being made to avoid the retailer, and the services of some wholesale middlemen at the central markets being retained. In still another instance, only the local middleman is eliminated, the association's business organization being substituted in his stead but depending upon whatever wholesale marketing agencies operate at the central markets for the final distribution of its products to retailers or consumers. Some of the associations providing a coöperative milk delivery service are examples of the first instance referred to, but the extent to which direct marketing to consumers is attained by coöperative associations in most agricultural trades is distinctly limited. Some of the large fruit marketing associations are examples of the second instance. They have agents at the principal central fruit markets and are less dependent upon commission agents and brokers. Car-lot wholesalers, jobbers and auctioneers, however, are regularly utilized in the distribution of their fruit crops, for they do not maintain the organization necessary to distribute all of their shipments to the retail trade. The great majority of coöperative marketing associations have made no effort to go beyond the wholesale trade agencies of the central markets.

No general statement may be made as to the advantage to farmers resulting from their coöperative sales efforts. It depends

upon the efficiency with which they operate and the extent to which the coöperative sales organization supplants private sales agencies. They may in varying degrees eliminate the profits of middlemen; reduce marketing costs to members by concentrating a larger volume of business in one local shipping and selling organization; in some instances make the distribution of their products somewhat more direct at the central markets; reduce freight bills by shipping in carload lots; and in a measure relieve the individual grower of marketing details and responsibilities.

From the standpoint of the relationship with their members, coöperative marketing associations conduct their marketing operations in any one of three principal ways:

1. Some of them purchase the farm products outright from the growers as private dealers do, paying local prices based on the wholesale prices prevailing at the central market. The profits or savings realized in the resale of the products at the central market are later distributed, as was stated in the section dealing with different types of associations.

2. Others do not purchase farm products but combine the shipments of their members so as to obtain carload rates and sell them for their members. After the returns of the sales of particular shipments are received by the association, deductions are made to cover expenses and sometimes also a manager's commission, and the remainder is remitted to the farmers. Organizations pursuing this method are sometimes known as coöperative shipping associations.

3. Various local associations and federations of associations market farm products on the basis of pools. Care needs to be taken so that growers of a low-grade crop will not gain at the expense of those who produce a crop of better quality. The California Almond Growers' Exchange maintains pools for each variety of fancy grade, the expenses of each pool are accounted for separately, and almonds not of fancy grade are marketed separately. Financial arrangements are also made so that necessary advances may be made to members and to meet marketing expenses in-

curred by the association before the returns from sales begin to flow into the pool.

The sales relationship between a coöperative association and its members is specified not only in the by-laws of the association but sometimes also in signed crop contracts. Such a contract may, for example, contain an agreement on the part of the member to deliver all or part of the crop to be grown on certain land; an authorization to pool the crops of such of its members with whom it has contracts; an agreement to pay liquidated damages in case the member fails to make deliveries as agreed upon in the contract; a clause to the effect that the contract shall "run with the land," i. e. it shall be binding upon the purchaser in case the land is sold during the period of the contract; and a clause appointing the association an agent of the member in the sale of produce and for other specified purposes such as shipping, packing, grading and storing.

An essential part of the marketing function of a coöperative association is the efficient distribution of its shipments to the markets where price conditions are most favorable and the skillful avoidance of overstocked or glutted markets. Not all associations succeed in this purpose. To accomplish it on a large scale involves a considerable outlay for accurate and timely market information. One writer states that "the great lesson to be learned from the California Fruit Growers' Exchange is the possibility of getting what the market will afford for goods. Their information concerning markets and the whereabouts and condition of their fruit costs them \$100,000 a year. But they learn where a car of fruit will sell for the most money and there it goes."<sup>6</sup>

Something has also been accomplished by organized efforts to increase sales in existing markets and to develop new markets. Accurate market and crop information, followed by coöperative advertising campaigns have characterized some of the coöperative fruit marketing associations. Staple products such as grain, cotton, wool and market live stock are less suited to efforts of this kind.

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<sup>6</sup> Hibbard, *Marketing Agricultural Products*, p. 368.



The grading, standardizing, inspection and packing functions of coöperative marketing associations are important not alone to the growers whose prices and profits are thereby enhanced in the long run, but also to all trade agencies interested in farm products and to the consuming public. The general importance of grading, standardization and inspection has been emphasized in earlier chapters<sup>1</sup> and its full value to the growers of farm products is in many instances not attained unless proper care is taken before shipment to the central markets. Correct packing is a necessary adjunct to grading and standardization in case of fruits, vegetables, dairy products, and other farm products which need to be packed in containers before they can be shipped to and marketed in the wholesale markets. Many coöperative associations have adopted grades and standards for their products, require standard containers, and either provide for association inspection of grading and packing by their members or actually undertake the work of grading and packing. Some of them have adopted and registered distinctive brands, labels and trademarks for protection as well as for advertising purposes.

Fruit marketing associations in some instances perform the closely related functions of so far as practicable standardizing the varieties grown, assisting in the protection of the growing crop against plant disease, insect pests or other sources of crop damage, and supervising the harvesting of the crop.

Something has been accomplished by coöperative associations in creating an efficient use for by-products and products of low grade. Examples may be cited of the preservation of dropped and culled fruits, and the savings to farmers resulting from evaporators, pickle factories, preserving houses and cider mills.

Much has been said concerning the place of coöperative associations of farmers in the control of central market prices. The problem here is vitally different from that of obtaining higher net farm prices by reducing marketing and shipping costs and dealers' profits. Central market prices are usually the basic prices from which net farm prices are derived. The manner

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<sup>1</sup> See also Chap. XVI.

in which they are determined has already been discussed and it has also been noted that the growers of farm products have usually had little direct voice in the decision of how much his products sell for at the central markets. Most coöperative associations have not attempted to influence central market prices, but some attempts have been made, and there is much speculation as to what may be accomplished in the future. Three principal central market price policies are easily traceable:

1. The possibility of large associations or federations of associations withholding a portion of the crop—at least the surplus—from the market when prices are too low from the growers' standpoint, has been suggested. Indeed attempts of this kind have been made on several occasions, but with the exception of the efforts of certain dairymen's organizations and various leaf tobacco associations the influence on central market prices has been slight. The influence exerted over market milk prices, however, is unique because of the comparatively local character of the market milk trade. The leaf tobacco campaign was confronted by a different situation than usually prevails when prices are low, for the difficulty was not so much the production of a real surplus as the absence of free competition in the auction markets of the southern leaf tobacco districts. The control of prices of the great agricultural staples by the storage of large quantities of farm products is a difficult procedure. Their prices are usually determined by world-wide conditions of supply and demand. The stored crops, moreover, will merely increase the carry-over of the next crop-year and will tend to reduce prices when it is finally marketed. Nor has the legality of such efforts at market control been definitely established. The Capper-Volstead Act of Feb. 18, 1922 leaves it to the Secretary of Agriculture to act in case he has "reason to believe that any such association monopolizes or restrains trade in interstate or foreign commerce to such an extent that the price of any agricultural product is unduly enhanced by reason thereof."

2. Several coöperative associations have exerted an influence over prices by bringing about organized collective bargaining. Various coöperative milk associations began their price-making

activities by organizing temporary strikes, but during the war the market milk trade was organized on a more permanent and acceptable basis. Milk distributors at various markets were obliged to appoint committees to confer with the farmers' associations, with the result that the producers have a direct voice in the prices received for market milk. It should be noted that the market milk trade differs from the trade in some of the world-wide staples such as grain, live-stock and cotton in that it is more local in character. The appointment of committeemen to determine the prices of farm products dependent primarily upon world conditions of supply and demand would be a more difficult matter. The success of collective price bargaining in the market milk trade, moreover, has been due in a large measure to the simultaneous efforts of the coöperative associations to solve the question of surplus milk. Not only do the associations make possible an organized discussion of the milk surplus problem, but steps were taken to use such quantities of market milk as are not wanted, in other ways. Creameries and cheese factories have been purchased or rented to utilize the surplus, and the milk of the various association members is pooled so as to distribute fairly the total proceeds from market milk, and milk used in producing butter and cheese.

3. A third price policy and one which may become important in the future, is the possibility of coöperative associations adjusting production to the available demand. Although the demand for some farm products can be stimulated to some extent, growers of most crops, no matter how effectively organized, cannot control the demand for agricultural products. There is, however, a possibility of regulating to some extent the quantity of products produced by them. American crops which are required to compete with crops produced in many other countries are least subject to control, but something may be accomplished by obtaining accurate market and crop information and so far as possible regulating production, particularly though the control of acreage planted to particular crops. This is essentially what producers in the manufacturing industries do. It is more difficult to adjust production to demand in the farming industries

than in industries such as iron and steel, coal, cotton and woolen textiles, farm implements, etc., but in this policy lies the price-making possibility of the coöperative associations. Nor should this policy result in legal complication so long as the effort is purely one of adjusting production to the existing demand.

Miscellaneous functions of coöperative marketing associations include the providing of cold storage facilities so as to reduce the storage cost of association members; operating pre-cooling plants in the fresh fruit industries; handling railroad freight claims; and taking part in efforts to obtain lower freight rates, more equitable refrigeration charges and a more efficient transportation service.

Coöperative marketing has not been a cure-all in the past nor is it likely to become one in the future. It has, however, become an important factor in the trade organization through which farm products are distributed. As stated by the Joint Commission of Agricultural Inquiry—"the coöperative association, at least until it is able to definitely demonstrate its ability to establish and operate a more direct, efficient, and less costly scheme of distribution than exists at present, should be organized in such a way as to make possible the coördination of its activities with those of existing distributive agencies." Many coöperative marketing associations are efficiently performing the specific marketing functions referred to above without completely displacing the prevailing marketing agencies which distribute most of the agricultural crops at the central markets and beyond. There is no assurance as to how much the producers of the farm products will gain from efforts to provide a complete marketing organization for some of the major crops.

The most difficult problem confronting the coöperative associations is that concerning central market prices. Here again it would appear that the price policy which is most likely to exert a permanent influence over central market prices is one which is based squarely upon the fact that they are usually affected primarily by conditions of supply and demand. Efforts to control the market for world-crops by storage of large quantities of farm products and insistence upon set prices without

reference to market demand are neither likely to be successful nor in the public interest. The more promising price policy, although difficulties will assuredly be encountered, is the regulation of the production of particular crops, so far as possible, on the basis of accurate world-crop and market information.

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## CHAPTER XVI

### THE COMMERCIAL INSPECTION AND GRADING OF AGRICULTURAL STAPLES

Each of the great agricultural staples is usually classified into (1) certain classes, types or general groups, and (2) into grades, and sometimes, as in case of leaf tobacco, the classes and types are further subdivided or distinguished. Ordinarily the classes or types represent differences in variety, in the territory in which the product is grown, or in general character, appearance and quality. The grades on the contrary represent specific differences in character, appearance, quality, cleanliness, condition or other special considerations.

**Functions of Inspecting and Grading.**—The division of commodities into classes and grades is not confined to the agricultural staples, articles such as coal, iron ore, pig iron, lumber, etc., being similarly handled. The practice prevails in practically all staple commodities which are produced by a large number of producers and are distributed in large quantities by a large number of dealers. Since these conditions prevail in the farming industries the inspection and grading of the agricultural staples is particularly important.

The functions of commercial inspection and grading are various:

1. The practice facilitates the purchase and sale of farm produce. Though much spot produce is sold by actual examination of the commodities, it is a common practice to buy and sell on the basis of samples, or a combination of samples and grades, and sometimes on the basis of grades exclusively. Grading is particularly important in the making and fulfillment of private contracts calling for the delivery at a stated future time of commodities which have not at the time the contract is

made been harvested or have not as yet been acquired by the dealer contracting to make the delivery.

2. It greatly facilitates the quotation and publication of spot as well as future prices.

3. It facilitates the storing and handling of commodities. East of the Rocky Mountains, for example, grain is commonly stored and handled in bulk, all grain of a particular grade being stored and handled in the same bins. Without inspection and grading the operation of the modern grain elevator system would be greatly hampered.

4. It makes possible the general warrant or negotiable warehouse receipt system. Without systematic grading all grain elevator receipts would have to represent specific lots of grain stored in special bins, or otherwise all of the same variety would have to be indiscriminately mixed to the great detriment alike of growers, dealers and millers.

5. It facilitates the making of loans on farm produce, for it enables bankers to accept receipts issued by recognized warehouses or elevators with the assurance that they represent the particular kind of commodity stated in the accompanying inspection certificate.

6. It tends in a measure to protect buyers and sellers from unscrupulous and dishonest practices. Inspection and grading services, particularly in the local or country markets, are not fully carried out, but so far as they are applied they serve to guarantee that commodity prices shall vary in accordance with the quality or condition of the articles sold.

7. On the grain and cotton exchanges where speculative "futures" are bought and sold, inspection and grading are particularly essential, such contracts being invariably based upon one or more standard or basis grades, and in case of delivery, requiring the delivery of the basis grade or certain other specified grades at fixed or variable price differences.

8. Coöperative marketing, particularly coöperative plans covering wide areas and including many producers, depends in large part upon the efficient grading of the products to be marketed. The practices of pooling the shipments of the various numbers

which is becoming quite general cannot operate fairly unless a proper system of grading is applied. Failure to do so imposes a penalty on the best class of producers. The work of coöperative associations which do not operate pools is also promoted, in that grading makes it possible to distribute overhead expenses equitably.<sup>1</sup>

9. In general, also the inspection and grading services—together with the central markets, exchanges, central warehouse systems and, in case of grain and cotton, the future contract system—facilitate the establishment of a national or world market for the agricultural staples.

**The Inspection and Grading Organization.**—The agricultural commodities are variously inspected and graded by different services or individuals: (1) In some cases, especially in case of the grain handled at some of the large primary grain markets, the commercial inspection and grading service is conducted by the states through inspection bureaus, classification boards, railroad and warehouse commissions or public utilities commissions. (2) In other cases it is performed by organized exchanges through bureaus, boards or committees, or under their auspices. (3) Dealers, jobbers, commissionmen or other trading and distributing agencies sometimes grade the commodities which they handle; and (4) in some instances, particularly in the fruit produce and leaf tobacco trades, the growers, individually or through coöperative associations, usually grade their crops before disposing of them. (5) The federal government is becoming of increasing importance in the grading and inspection of farm products. In the grain trades the government has enforced uniform grain standards which are applied by inspectors licensed by the government and subject to federal supervision. In the cotton trade federal cotton standards, which were at first recommended to the spot cotton trade and compulsory in case of future contracts, were later made obligatory in interstate and foreign commerce, and are applied by federal boards of examiners at several large cotton markets. Congress

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<sup>1</sup> U. S. Department of Agriculture, *Weather, Crops and Markets*, May 19, 1923, p. 493.



has established standard grades applicable to the interstate trade in apples; in various other trades uniform federal standards have been recommended by the Department of Agriculture, and a number of additional products are being investigated with a view to standardization of grades. Federal inspection of various food products has been established at a number of the more important markets for such commodities.

The inspection and grading organization and the methods pursued in the grain, cotton, live stock, wool and leaf tobacco trades will be described more fully in the remainder of this chapter.<sup>2</sup> It is understood of course that the term inspection as here used refers to commercial inspection and not to public health inspection devoted to the detection of disease or the violation of the meat and livestock inspection or pure food statutes.

**Illinois Grain Inspection Service.**—The organization and methods of the state grain inspection service of Illinois may be accepted as a standard illustration of state grain inspection both because it was the first to be established in the United States<sup>3</sup> and because it operates in Chicago, the largest grain market in the world. Prior to 1904 the so-called "track system" of inspection prevailed in Chicago as it also did in other central grain markets. Under this system the grain was inspected in the cars by individual inspectors who worked in the open freight yards. In that year, however, the much improved system of "room" or "office inspection" was adopted at Chicago, and later it was also established in Minneapolis, Duluth, Buffalo and in part at other markets.<sup>4</sup> Office inspection is superior to track inspection in that it avoids the bad influence of adverse weather conditions upon the judgment of the inspectors and the condition of the grain, substitutes the combined judgment of several inspectors for the individual judgment of one, and

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<sup>2</sup> For fruit grading see Chap. XIII, p. 299; grading of dairy products, Chap. XIV, pp. 327, 338.

<sup>3</sup> Established in 1871.

<sup>4</sup> J. C. Merrill, "Classification of Grain into Grades," *The Annals of the American Academy of Political and Social Science*, Sept., 1911, p. 62.

has the advantage of laboratory aid in the determination of the percentage of moisture. The grading of grain is at best largely a matter of human judgment rather than one of scientific exactness, and this judgment is less subject to error under the favorable conditions of a well-heated or cooled and lighted inspection room than in the open freight yard which is subject to varying conditions of excessive cold or heat and of rain or snow.

Under the office inspection plan as now conducted at Chicago, a corps of state samplers take samples from all the cars

<b>R.R.</b>		Date	Sampler
Initials	Car No.	Grain	Sample Remarks
Weight	Dockage	Grade	
Dgd.		Insp. Remarks	
F. M.		Consignee	
Insp. P. M.		<b>SAMPLE TAKEN</b>	
Smut D. K.		(A) Door Probe <input type="checkbox"/>	(C) Door Sack Probe <input type="checkbox"/>
Moisture Content		(B) Shallow Probe <input type="checkbox"/>	(D) Int. S. Sack Probe <input type="checkbox"/>
		Inspector	Hook No.

FORM XXVII.

arriving at the freight yards. These samples consisting of two quart bags filled with grain drawn from different parts of each car<sup>5</sup> are properly marked and together with the railroad notice of arrival are turned over to the inspectors at the inspection office, where they are emptied into receivers. These inspectors are licensed by the Secretary of Agriculture in accordance with the requirements of the Grain Standards Act. If the inspector in charge of a given lot has any doubt as to the proper grade "he calls upon the chief grain inspector or supervising inspector who is always present and their combined judgment determines the grade. Frequently all the

<sup>5</sup> W. S. Cowen, "Grain Inspection in Illinois," *The Annals of the American Academy of Political and Social Science*, Sept., 1911, pp. 81-90.

inspectors are called around the table holding some particularly difficult sample and each inspector is required to make a grade for it and give his reasons therefor."<sup>6</sup>

As soon as a sample is graded the grade is noted on a card such as is reproduced in Form No. 27, the sample and card are placed in the original bag, and are passed along to the official record writer, who enters the name of the delivering railroad, the car number, the grade, dockage and test weight of the grain, the reasons for the grade given, the names of the consignees and inspector who did the grading, and the number of the hook on which the sample is to be hung, on the official daily report, a copy of which is shown in Form No. 28. One half of each sample is placed in a paper bag together with the railroad notice and sent to the Board of Trade to be placed in charge of the firm handling the shipment, and the other is returned to the original bag and hung upon its proper hook in the sample room to be preserved for twenty-four hours and then emptied. The official grade is stated in a state inspection certificate, a copy of which is reproduced in Form No. 29. A different form of inspection certificate is issued in case of an "out inspection," and distinctive forms are also used in case of out inspections in bulk by steamers for wheat, corn and oats and for rye and barley.

The grain standards act and regulations of the Secretary of Agriculture require each licensed inspector to make a summarized report once each month to the Secretary through the Office of Federal Grain Supervision for all grain delivered to and shipped from an elevator. Other inspection documents used in the Illinois state grain inspection service include a cargo service certificate based upon the original inspection certificate when it is surrendered to the Division of Grain Inspection upon shipment of grain in vessels; a request for special inspection; a deputy inspectors' original report covering grain received into public elevators from vessels; a distinctive "licensed inspectors report" covering in and out inspections at private elevators; and a standardized notice to railroad agents covering cars con-

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<sup>6</sup> *Ibid.*, p. 83.

OFFICIAL DAILY REPORT  
OF INSPECTORS GRADING OF GRAIN  
DEPARTMENT OF TRADE AND COMMERCE—CHICAGO DIVISION OF GRAIN INSPECTION

R. R.

DATE

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tained in the carrier's car arrival notice but not placed upon grain sampling tracks.

Should there be dissatisfaction with the original inspection, application for reinspection may be made on Form No. 30. Even thereafter an appeal may be made to the "Board of Appeals" consisting of three men not connected with the inspection department and not engaged in the purchase or sale of grain. A further appeal may be made to the Secretary of Agriculture under the Grain Standards Act by filing "in writing



STATE OF ILLINOIS  
**GRAIN INSPECTION CERTIFICATE**  
Department of Trade and Commerce

Chicago, \_\_\_\_\_ 192\_\_

I hereby certify that I hold a license under the United States Grain Standards Act to inspect and grade the grain by this certificate; that on the above date I inspected and graded the following lot or parcel of grain; and that according to the official grain standards of the United States, it is that stated below:

Location \_\_\_\_\_ Identification \_\_\_\_\_ Kind \_\_\_\_\_  
Grade \_\_\_\_\_ Dockage \_\_\_\_\_ %  
Test Weight \_\_\_\_\_ per bu. Moisture \_\_\_\_\_ %  
Damaged \_\_\_\_\_ % Heat Damaged \_\_\_\_\_ % Foreign Mtr. \_\_\_\_\_ %  
Remarks \_\_\_\_\_

COUNTERSIGNED

CERTIFICATE NO. |

the rules of  
inspection of Illinois (not including appeals  
under the U. S. Grain Standards Act) must  
be filed in the office within twenty-four (24)  
hours from the time of initial inspection and  
no grain inspected shall have been  
or has left this District.

*Richard Murphy* :

*Charles J. Peters* Chief  
Grain  
Inspector

FORM XXIX.

or by telegraph in the Office of Federal Grain Supervision in the district in which the inspection was made."

All grain stored in the central elevators is inspected and graded at least twice—once as has just been described, when it is loaded "in," and again when it is loaded "out." As was previously mentioned it is owing to the difference between the "in" and "out inspection" that profits may be realized from the mixing of grain in private elevators or special bins.<sup>7</sup> So-called house inspectors are stationed at the elevators of Chicago by the state inspection department to grade the grain shipped

<sup>7</sup> U. S. Department of Agriculture, Office of the Secretary, *Circular No. 70*, Regulations under the U. S. Grain Standards Act.

# COMMERCIAL INSPECTION AND GRADING 379

out, but in order to make the in and out inspections equally severe, the department also requires that samples from each car or vessel load be sent to the main office for reinspection by a board of review under the direct supervision of the chief grain

<p align="center"><b>'APPLICATION FOR RE-INSPECTION'</b>  <b>MADE TO THE</b>  <b>DEPARTMENT OF TRADE AND COMMERCE</b>  <b>DIVISION OF GRAIN INSPECTION</b>  <b>ILLINOIS</b></p>											
<p>Request is hereby made, by undersigned, for a re-inspection of grain, contained in cars, as are listed below.            We agree, provided present grade is sustained, to pay Fees applying and now in effect.</p>											
Re-Inspection Called					ORIGINAL INSPECTION			Re-Inspection Accomplished			
Date.....19					Date.....19			Date.....19			
----- } Review or Re-inspt.					No.-----						
Number	Road	Inapt.	Folio	Sus.	NEW GRADE						
PRESENT GRADE					Wgt.	Dgd.	Moist	Dk.	HD	FM	CG
Number	Road	Inapt.	Folio	Sus.	NEW GRADE						
PRESENT GRADE					Wgt.	Dgd.	Moist	Dk.	HD	FM	CG
_____ SUSTAINED } _____ CHANGED }					_____ INSPECTOR _____ APPLICANT						
OFFICIAL RECORD HARMONIZED BY					BY _____						
CLERK _____											

75375-20M-6-22

FORM XXX.

inspector, any errors in the work of the house inspector being subsequently changed.

The work of grain inspection in the state of Illinois is under

the general supervision of the State Public Utilities Commission and is performed by the Division of Grain Inspection of the Department of Trade and Commerce. As was formerly stated the work of state inspection is conducted hand in hand with state weighing, warehouse receipt registration and elevator supervision.<sup>8</sup>

**Factors Determining Grades of Grain.**—Four principal considerations determine the classification of any given lot of grain.

1. Grain is *classed* by general varieties. Thus winter wheat is classed separately from spring wheat and these classes in turn may be subdivided into white, red, yellow, hard, soft, northern, durum or other varieties.

2. Differences in *quality and appearance* are important *grading* considerations. The evidences of quality and appearance sought for are numerous. To be assigned a particular grade a given lot must meet all the requirements and restrictions as to weight, soundness, damaged kernels, dryness or dampness, "sweetness," coolness or heat, and "brightness" or color. The inspectors may also determine whether the grain is badly bleached, musty, "smutty," garlicky, "shrunk," "cracked" finely or broken, scoured, clipped, chemically treated, or unfit for warehousing. The federal regulations provide that some of these factors shall not affect the grade but shall be separately indicated in addition to the grade. Treated wheat is graded as if it were not treated and the grade is given with a statement indicating the kind of treatment. Garlicky wheat is also graded as if it were not garlicky but the grade designation is followed by the word "garlicky." Smutty wheat is graded as if it were not smutty and the percentage of "smut dockage" is added to the grade designation, or in case the amount of smut present is so great that any one or more of the grade requirements of the grades from No. 1 to No. 5, inclusive, cannot be applied accurately the wheat is classified as "sample grade" and the word smutty accompanies the grade designation.

3. Presence of *foreign material* is a grading consideration. The federal rules applicable to wheat define foreign material

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<sup>8</sup> See Chap. IV, p. 75.

other than dockage as including "all matter other than wheat which is not separated from the wheat in the proper determination of dockage, except as provided in the case of smutty wheat." It is to be distinguished from "dockage" which includes "sand, dust, weed seeds, weed stems, chaff, straw, grain other than wheat, and any other foreign material, which can be removed readily from the wheat by the use of appropriate sieves, cleaning devices, or other practical means suited to separate the foreign materials present, also undeveloped, shriveled, and small pieces of wheat kernels removed in properly separating the foreign material and which cannot be recovered by properly rescreening or recleaning." Dockage is calculated in terms of the percentage of the total weight of the grain including dockage and when it amounts to at least one per cent is added to the grade designation.

4. The *degree of mixture* of varieties affects *grading*, No. 1 hard red winters wheat, for example, not permitting of more than 2 per cent of common white, white club and durum, singly or combined; No. 2 not over 5 per cent, and Nos. 3, 4, and 5 not over 10 per cent.

**The Grades of Grain.**—The uniform grades fixed in the official grain standards for wheat are as follows:

<i>Classes</i>	<i>Grades</i>
I. Hard Red Spring Wheat	
(a). Dark Northern Spring.....	Nos. 1, 2, 3, 4 Sample
(b). Northern Spring.....	Nos. 1, 2, 3, 4 Sample
(c). Red Spring.....	Nos. 1, 2, 3, 4 Sample
II. Durum Wheat	
(a). Amber Durum.....	Nos. 1, 2, 3, 4 Sample
(b). Durum.....	Nos. 1, 2, 3, 4 Sample
(c). Red Durum.....	Nos. 1, 2, 3, 4 Sample
III. Hard Red Winter Wheat	
(a). Dark Hard Winter.....	Nos. 1, 2, 3, 4 Sample
(b). Hard Winter.....	Nos. 1, 2, 3, 4 Sample
(c). Yellow Hard Winter.....	Nos. 1, 2, 3, 4 Sample
IV. Soft Red Winter Wheat	
(a). Red Winter.....	Nos. 1, 2, 3, 4, 5 Sample
(b). Red Walla.....	Nos. 1, 2, 3, 4, 5 Sample



<i>Classes</i>	<i>Grades</i>
V. Common White Wheat	
(a). Hard White.....	Nos. 1, 2, 3, 4, 5 Sample
(b). Soft White.....	Nos. 1, 2, 3, 4, 5 Sample
VI. White Club Wheat.....	Nos. 1, 2, 3, 4, 5 Sample

Instead of different grading designations and definitions at the various markets as was formerly the case, these standard grades are now in general use throughout the United States. Official standards and grades have also been established for shelled corn and oats.

### COTTON GRADING AND INSPECTION

The same reasons which underlie the careful classification and grading of grain also underlie the classification and grading of cotton, for both commodities are the basis of a vast trade in future contracts as well as of spot or cash transactions. The difficulties encountered in the inspection of cotton are even greater than in the case of grain, for the cotton crop comprises a wider range of quality. Cotton grades are vitally affected by differences as to the time of ripening and harvesting, methods of picking, soil conditions, and as to storms, frosts and other conditions of weather. These differences, if general, give every cotton crop a more or less distinctive character, and, if limited to particular sections of the cotton belt, cause wide differences in the range of quality; indeed cotton of many qualities is sometimes unavoidably compressed into a single bale. The wide range in the varieties of cotton grown throughout the South, moreover, adds to the general confusion.

**Cotton-Grading Factors.**—The various “grades” recognized on the cotton exchanges and generally in the trade, depend largely upon three considerations: (1) color, (2) relative freedom from leaf and other foreign substances, and (3) character.

In the matter of color three main divisions are recognized—white, tinged and stained. Cotton is “white” when it opens in the fields and is picked before being affected by frosts or winter storms; it is “tinged” when the bolls before they open are

lightly frosted or when the cotton has been exposed to rain so as to give to the cotton a yellowish or golden orange color; and, it is "stained" when heavy frosts or severe rainstorms turn its natural white color into a deep orange or tawny color. White cotton may have different degrees of white ranging from "bright" to "bluish"; and tinges and stains may have different degrees of color. The many differences in color due chiefly to weather and soil conditions, constitute one of the difficulties of grading; the passing of a cloud or the presence of snow on the ground may unconsciously influence an inspector to the extent of as much as a quarter of a grade.<sup>9</sup>

Leaf and other foreign substances or impurities such as dry leaves, specks of dust, dirt, sand, bits of husks, strings, motes, gin-cut fiber, cut-seed and unripe fiber, vary from year to year, from one growing district to another, and from one bale to another and are direct grading factors.<sup>10</sup> The "character" of the cotton is a more indefinite consideration, referring to the general condition or quality of the cotton. All the grading factors are essentially dependent upon human judgment, and it is entirely probable that no two experts would grade a large lot in exactly the same way or that the same expert would grade it in exactly the same way at different times.

The commercial "grades" of cotton do not regularly take into consideration the length, strength, pliability, cling and evenness of the cotton fiber, although these considerations are of great importance to the spinner, and it is partly because of their disregard that many spinners do not buy solely on the basis of grade. They commonly buy either by sample, or combination of grade and sample. When they purchase by grade, one of the practices of the cotton trade is to state the staple as well

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<sup>9</sup> U. S. Bureau of Corporations, *Cotton Exchanges* (1908), Part 1, p. 65.

<sup>10</sup> "Motes" are immature seeds or ends of seeds that are pulled off in ginning. "Neps" and "cut-fibers" are lots, bunches or kinds resulting from feeding the gin too rapidly, from the gin being in bad order, from the presence of unripe fiber, or from dampness. "Strings" result from ginning unripe or wet seed-cotton or from the wrong adjustment of the gin-saw brushes. "Cut-seeds" result from "fast ginning with a hard roll and by broken or bent gin-saw teeth that strike the grate bars." See U. S. Bureau of Plant Industry, *Farmers' Bulletin No. 591*, July 10, 1914, pp. 3-5.

as the grade, as for example, "fully good middling,  $1\frac{1}{8}$  inch staple, New Orleans class," or "strict low middling  $1\frac{1}{8}$  inch staple, New York class." Another practice is to state the length of staple in comparison with the length of staple of a type which has been agreed upon as a standard by both buyer and seller. In the spot markets, cotton, the fiber length of which is  $1\frac{1}{8}$  inches or above, is usually known as "staple cotton" and is more commonly sold by sample than in any other manner. In case of contract deliveries, the New York and New Orleans Exchanges make no allowance unless at least 80 per cent of a lot of cotton has a staple of at least 1 or  $1\frac{1}{8}$  inches respectively; and limit it to  $\frac{1}{4}$  cent per pound. These allowances, moreover, are in the price paid for the cotton and not in its grade.

The various *general classes* of cotton recognized by the trade, such as Atlantic Upland, Gulf, Texas, peelers, canebrake, rivers and benders, convey to the cotton buyer much information as to the length and strength of the cotton staple. These classes which indicate general differences in variety, length of staple and region of growth are defined in chapter VI.

It is probable that in the future spinners will be enabled to purchase a larger share of their cotton on the basis of known standard types, for the Secretary of Agriculture has been authorized by the Cotton Futures Act "to establish and promulgate standards of cotton by which its quality or value may be judged or determined, including its grade, length of staple, strength of staple, color, and such other qualities, properties, and conditions as may be standardized in practical form which shall be known as the 'Official cotton standards of the United States.'"

**Cotton Grades.**—Before the influence of the official cotton standards began to be felt the grades in most common use in American spot cotton markets were thirteen in number, as follows:

- | <i>Above Middling</i>   | <i>Below Middling</i>  |
|-------------------------|------------------------|
| 1. Fair                 | 7. Middling            |
| 2. Strict middling fair | 8. Strict low middling |
| 3. Middling fair        | 9. Low middling        |

<i>Above Middling</i>	<i>Before Middling</i>
4. Strict good middling	10. Strict good ordinary
5. Good middling	11. Good ordinary
6. Strict middling	12. Strict ordinary
	13. Ordinary

"Middling" cotton was invariably the basis grade, and the grade names containing the word "strict" were known as "half" grades in contrast with the remaining or "full" grades. Frequently many additional grade names were used, because the thirteen grades mentioned above unless further qualified have reference only to white cottons. In grading colored cotton the general practice in the larger spot markets was to add to the usual grade names the words "off color" or "fair color," "spotted," "tinged," or "stained," the result being that there were various classes of the same grade of cotton.<sup>11</sup>

There was for many years a general lack of uniformity among the various cotton markets as to the number of grades recognized and the severity of the rules governing them. As long ago as 1874 the cotton exchanges of the United States endeavored to bring about uniformity by adopting a system then known as the American classification, but which later became known as the New York classification because the exchange of that city adhered to it for forty years. Until January 1, 1908, this classification as enforced in New York comprised 30 grades, 11 full grades, 10 half grades, and 9 quarter grades. The basis of this, as of all other cotton classifications, was "middling" cotton, above which there were nine superior grades and below which there were 20 grades of inferior quality.<sup>12</sup> All of these grades

<sup>11</sup> U. S. Bureau of Plant Industry, *Farmers' Bulletin No. 591*, July 10, 1914, p. 2.

<sup>12</sup> The New York classification prior to Jan. 1, 1908, contained the following grades, the terms "barely" and "fully" indicating quarter grades, the term "strict" half grades, and the others being full grades:

† Fair

† Strict middling fair  
Middling fair

\* Barely middling fair  
Strict good middling  
\* Fully good middling  
Good middling

\* Barely good middling  
Strict middling  
Middling  
Strict low middling  
\* Fully low middling  
Low middling  
\* Barely low middling

were for many years deliverable on New York contracts, but grading practices had meanwhile changed throughout the South and there was complaint that too many low grades were deliverable in the New York market. The New York Cotton Exchange, therefore, on January 1, 1908, reduced the number of deliverable grades to 19, on April 1, 1908, to 18, and on December 1, 1914, to 14. In 1915 this entire system of classification was abandoned in favor of a system based upon the standard grades established by the United States Department of Agriculture.

In an effort to bring about greater fairness and uniformity Congress in 1909 authorized the Department of Agriculture to establish official cotton standards, and the department in 1914 decided upon standards for nine white grades. Additional standardization powers were conferred upon the Secretary of Agriculture in the Cotton Futures Act of 1914 and in the reenacted law of 1916 and its amendments. The original standards for white cotton as changed somewhat in an order effective August 1, 1923 are as follows: Middling fair, strict good middling, good middling, strict middling, middling, strict low middling, low middling, strict good ordinary and good ordinary. On January 28, 1916, moreover, official standards were established for color in the various grades of American Upland cotton and these as changed in the order effective August 1, 1923, are as follows:

*Yellow tinged cotton*

Strict good middling  
Good middling  
Strict middling  
Middling  
Strict low middling

Strict good ordinary

\* Eliminated on Jan. 1, 1908.

† Eliminated on Dec. 1, 1914.

‡ Eliminated on Apr. 1, 1908.

\* Fully good ordinary

† Good ordinary

Strict good middling tinged

Good middling tinged

Strict middling tinged

Middling tinged

Low middling

*Yellow stained cotton*

Good middling  
Strict middling  
Middling

Strict low middling tinged

† Low middling tinged

\* Strict good ordinary tinged

\* Fully middling stained

Middling stained

\* Barely middling stained

‡ Strict low middling stained

\* Fully low middling stained

\* Low middling stained

*Blue stained cotton*  
 Good middling  
 Strict middling  
 Middling

*Light stained cotton*  
 Good middling  
 Strict middling  
 Middling

*Spotted cotton*  
 Good middling  
 Strict middling  
 Middling  
 Strict low middling  
 Low middling

*Gray cotton*  
 Good middling  
 Strict middling  
 Middling

The various grades and colors of the official cotton standards for American Upland cotton are listed in Table XIV so as to

TABLE XIV

Blue Stained.	Gray.	Standards for Grades of Up- land Cotton. White.	Spotted.	Yellow Tinged.	Light Stained.	Yellow Stained.
<hr/>						
		1 or M. F.				
		2 or S. G. M.		2 T.		
3 B.	3 G.	3 or G. M.	3 Sp.	3 T.	3 L. S.	3 S.
4 B.	4 G.	4 or S. M.	4 Sp.	4 T.	4 L. S.	4 S.
5 B.	5 G.	5 or M.	5 Sp.	5 T.	5 L. S.	5 S.
		6 or S. L. M.	6 Sp.	6 T.		
		7 or L. M.	7 Sp.	7 T.		
		8 or S. G. O.				
		9 or G. O.				

Symbols in heavy type denote grades and colors for which practical forms of the Official Cotton Standards are prepared. Symbols in *italics* represent the designations of cotton which in color is between practical forms of the same grades.

The grades shown above the horizontal line are deliverable on future contracts made in accordance with Section 5 of the United States cotton futures act. Those below the line are untenderable on such future contracts.

Grades and colors of the Official Cotton Standards for American Upland cotton.<sup>13</sup>

<sup>13</sup> Bureau of Agricultural Economics, *Service and Regulatory Announcements*, Issued October, 1922.



**INSPECTION BUREAU.**

NEW YORK, \_\_\_\_\_ 191

Mr. \_\_\_\_\_  
INSPECTOR-IN-CHIEF.

The following is a report of Cotton

inspected by me at \_\_\_\_\_

For account of \_\_\_\_\_

Request No. \_\_\_\_\_ Passed \_\_\_\_\_ Bales, Rejected \_\_\_\_\_ Bales,

Weigher, \_\_\_\_\_ Samples \_\_\_\_\_ lbs.

**ASSISTANT INSPECTOR.**

### SAMPLER.

## REMARKS.

**FORM XXXI (Front).**





ing rules of the Secretary of Agriculture. The desire for more complete uniformity, however, prompted Congress to enact a law effective August 1, 1923, which provides that the official standards are to be the only standards used in (a) any shipment or transaction of cotton in interstate or foreign commerce, (b) any publication of or price quotation based on such shipments, or (c) in the classification involved in such shipments.

**Methods of Grading Cotton.**—Prior to 1909–1910 the grading organization of the New York and New Orleans exchanges

C 47993.

Rejected \_\_\_\_\_ 19 \_\_\_\_\_ at \_\_\_\_\_

For Account of \_\_\_\_\_

INSPECTOR N. Y. C. EX.

NO.	MARK	WEIGHT	ALLOWANCE		COMP.	UN-COMP.	WHY REJECTED
			WET	BAGGING			


FORM XXXII.

differed widely, the latter having had a board of arbitrators to pass upon cotton when tendered for contract deliveries and assuming no official responsibility for the grades of the cotton. Since then, however, the New Orleans Cotton Exchange has adopted the New York plan, both exchanges having an official inspection bureau or department and an inspection fund, and both provide for the regular issue of cotton class certificates through boards of cotton examiners maintained by the United States Department of Agriculture. Their inspection organiza-



(Form 31), (2) report of cotton rejected (Form 32), and (3) a weighmaster's return of weights (Form 33).

The samples drawn from the bales by employees of the exchange are divided into two parts, and taken to the sample rooms where they are placed in papers and are opened and exposed to the air for twenty-four hours.<sup>14</sup> They are then compared by member of the board of examiners, and one set is retained at the sample room to remain there until the cotton is shipped or reclassified while the other or original sample is taken to the classification room. Both sets of samples are identified with a lot

<b>OFFICE OF INSPECTOR-IN-CHIEF</b> <b>NEW YORK COTTON EXCHANGE</b>	
<i>New York</i> _____ <i>19</i>	
<i>Lot No.</i> <b>L</b>  _____	<i>Mark</i> _____
<i>Samples of</i> _____ <i>Bales Cotton</i>	
<i>Warehouse</i> <b>Independent Stores</b>	
<i>Owner</i> _____	
<i>Papers</i> _____	

FORM XXXIV.

poster, the form of poster attached to the original set being reproduced in Form 34. Tags are also attached to identify each bale of cotton. The cotton is then classified by the Board of Cotton Examiners of the Department of Agriculture. Upon arriving at a decision the examiners enter their findings in a

<sup>14</sup> Rule as to length of exposure not always observed.

**CLASSIFICATION COMMITTEE.  
NEW YORK COTTON EXCHANGE**

No. \_\_\_\_\_

New York, \_\_\_\_\_ 191

Classification of \_\_\_\_\_ Bales Cotton

Submitted by \_\_\_\_\_

Mark \_\_\_\_\_ Lot No. \_\_\_\_\_

Warehouse \_\_\_\_\_

**GRADES.**

_____ 1.25 ea	Fair
_____ 1.25 ea	Strict Middling Fair
_____ 1.25 ea	Middling Fair
_____ .80 ea	Strict Good Middling
_____ .75 ea	Fully Good Middling
_____ .65 ea	Good Middling
_____ .60 ea	Barely Good Middling
_____ .55 ea	Strict Middling
_____ .50 ea	Fully Middling
_____ .45 ea	Middling
_____ .40 ea	Barely Middling
_____ .35 ea	Strict Low Middling
_____ .30 ea	Fully Low Middling
_____ 1.25 ea	Low Middling
_____ .25 ea	Strict Good Ordinary
_____ 1.00 ea	Good Ordinary
_____ .45 ea	Strict Good Middling Tinged
_____ Value of 100.	Good Middling Tinged
_____ .35 ea	Strict Middling Tinged
_____ .30 ea	Middling Tinged
_____ 1.25 ea	Strict Low Middling Tinged
_____ 1.00 ea	Low Middling Tinged
_____ 1.25 ea	Middling Stained

SALES COMPRESSED  
SALES UNCOMPRESSED

Total  
Sales \_\_\_\_\_

\_\_\_\_\_ } Committee.  
\_\_\_\_\_  
\_\_\_\_\_

## UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF AGRICULTURAL ECONOMICS

## BOARD OF COTTON EXAMINERS

## Cotton Class Certificate

No 1991

New York, N. Y., December 18th, 1922, 192

Pursuant to Section 5 of the United States cotton futures Act and the regulations of the Secretary of Agriculture thereunder, we certify that the classification, in accordance with the official cotton standards of the United States, of the cotton hereinafter described, located in New York, N. Y., is that shown below. This certificate shall be valid for use in the tender of the said cotton on a contract made at, on, or in the New York Cotton Exchange subject to said Section 5, as provided in said Act and regulations and in the rules of the said Exchange not inconsistent therewith.

## BOARD OF COTTON EXAMINERS

By W. P. BARROT  
ChairmanLot No. 179 Marks T. H. P. Location American Book Company

\*Storage or press receipt No. \_\_\_\_\_ \*Number of bales, compressed \_\_\_\_\_ uncompressed \_\_\_\_\_

\*Weight \_\_\_\_\_ pounds \*Date weighed \_\_\_\_\_

\*These spaces provided only for the use of the Exchange Inspection Bureau

## SUMMARY:

Total 30 b/c MF 5 SCM 24 CM 1 SM \_\_\_\_\_ M \_\_\_\_\_ SLM \_\_\_\_\_ LM \_\_\_\_\_ CMT \_\_\_\_\_ SMT \_\_\_\_\_ GMY

Tag No.	Grade or Equivalent	Reduced from (grade) a/c ( )	Length of Sample	Tag No.	Grade or Equivalent	Reduced from (grade) a/c ( )	Length of Sample
254500	S. O. M.		15/16				
254505	S. O. M.		15/16				
254520	S. O. M.		1				
254524	S. O. M.		15/16				
254525	S. O. M.		7/8				
254529	O. M.		7/8				
254510	O. M.		15/16				
254506	O. M.		15/16				
254502	O. M.		1				
254504	O. M.		15/16				
254513	O. M.		1				
254517	O. M.		15/16				
254503	O. M.		7/8				
254527	O. M.		7/8				
254501	O. M.		7/8				
254509	O. M.		7/8				
254508	O. M.		7/8				
254507	O. M.		7/8				
254521	O. M.		15/16				
254516	O. M.		1				
254511	O. M.		15/16				
254514	O. M.		15/16				
254512	O. M.		1				
254523	O. M.		1				
254519	O. M.		15/16				
254528	O. M.		15/16				
254518	O. M.		15/16				
254522	O. M.		7/8				
254515	O. M.		15/16				
254526	S. M.		15/16				

memorandum (Form 35,)), one copy of which is retained by the classification committee and the other given to the owner of the cotton.

When the grades are finally established the board issues an official cotton class certificate (Form 36) which is used in the making of deliveries.

Although the speculative exchanges at New York and New Orleans provide machinery to handle the detailed work connected with weighing, sampling, etc., the government has taken charge of the actual classification of the cotton. Regulations pertaining to the carrying out of the grading and inspection provisions of the cotton futures act provide for (a) boards of examiners to be located at New York, New Orleans and elsewhere when deemed necessary; (b) the method of making requests for the classification of cotton; (c) rules governing methods of inspection and the manner of taking samples; (d) regulations concerning the issuing of class certificates; (e) procedure in case certificates have not been issued prior to delivery on a future contract; (f) procedure in case of review of a classification is desired; (g) the manner of supervising transfers of cotton from one storage place to another; (h) the manner of securing a preliminary informal sample classification; and (i) the charges for classification and certification of the cotton inspected.

Owing to the extensive sale of speculative future contracts, an unusual amount of attention has for many years been given to the grading of grain and cotton, but other farm staples are also classified and graded at some stage or other of their distribution from producer to consumer. The purchase and sale of live stock, wool, tobacco, dairy products and fruit in the great spot markets for those commodities, the quotation of spot prices and the granting of loans are greatly facilitated by grading.

#### COMMERCIAL CLASSIFYING AND GRADING OF LIVE STOCK

Live stock sold by growers to local dealers is seldom graded at the local markets, each animal or group being purchased by actual inspection on the part of the buyer. Those sold in the

stockyards of the large central markets are likewise sold by actual inspection at the pens, but as formerly stated they are usually divided into "bunches" so as to attain approximate uniformity in "character and quality." This classification into "bunches" by commissionmen for the purpose of sale is a form of grading, but it is not conducted in accordance with fixed rules. The animals of any particular shipment are bunched in accordance with the views of the commissionman and the buyers as to number, sex, age, and often as to their quality for dressed meat, export, canning, curing, stocking, feeding or other purposes.

Classes and grades are also needed at the central markets for the quoting of live-stock prices. The animals are not systematically classed and graded for this purpose, but from the sales which are made at the stockyards each market is able to publish prices in terms of classes and grades which are generally understood by the trade. There is no complete uniformity either in the factors considered or in the terms used to designate the grades, although much has been accomplished by the Department of Agriculture in recent years.

In quoting the prices of cattle, for example, a distinction has usually been made between "native," "western," and "Texan" cattle, which constitute *classes* indicating in general their breed and the place where they are raised. Native cattle are bred and raised on the farms of the Central West, western cattle on the ranges and ranches of the Far West and Northwest, and Texan cattle on the ranges and ranches of the Southwest. Western and Texan cattle are further distinguished as to the method of preparation for market, terms such as grassers, corn-fed or hay-fed Texan or western, Montana-Texans or Wyoming-Texans (Texan-cattle which have grazed on western ranges), Dakota natives (Dakota range cattle originating in Texas), etc., have frequently been used in price quotations but without uniform practice and the distinctions between these classes are not sharp. Cattle are further classed according to sex and age. Thus the price quotations may be in terms of native steers, western corn-fed cows, etc. Any cattle, moreover, which are sold to feeders,



stock growers, breeders or dairymen for fattening or stocking purposes are known as "feeders" or "stockers."

The various classes of cattle are sometimes, though not always, subdivided into *grades of quality* indicating difference as to weight, the amount of dressed beef obtainable from an animal of a given live weight, the quality of the dressed beef and the quality of the animal for canning, curing, export or other purposes. The grades most commonly recognized in the past were, fancy, prime, choice, good, medium, and rough. Thus the prices may be quoted in terms of choice western corn-fed steers, prime native steers, or any other combination of class and grade.

The cattle grades are not generally found in the purchase records of the packing concerns who are the principal buyers. The packers commonly record their purchases in terms of the *classes* mentioned above, the records of one packing plant showing as many as twenty-two combinations of classes.<sup>15</sup> In giving orders to their cattle buyers, the packers and slaughterers also use terms such as "packers," "beef cattle," "butcher stock," "canners," "cutters," "strippers," "bulls," "calves," and "export," each term indicating a particular use of the animal for packing, local butcher, canning, curing, exporting or other purposes.

The United States Department of Agriculture has endeavored to assist in bringing about uniformity by recommending standard sets of classes and grades for live stock and formulating simple definitions for each. Their adoption at different markets has

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<sup>15</sup> U. S. Bureau of Corporation, *The Beef Industry*, p. 90. The records of the Hammond Company at St. Joseph showing the following classes:

- |                         |                   |
|-------------------------|-------------------|
| 1. Native steers        | 12. Texan steers  |
| 2. Yearlings, baby beef | 13. Fed Texan     |
| 3. Branded natives      | 14. Texan heifers |
| 4. Branded              | 15. Texan cows    |
| 5. Native heifers       | 16. Stags         |
| 6. Heifers              | 17. Steers        |
| 7. Colorado heifers     | 18. Cows          |
| 8. Westerns             | 19. Rangers       |
| 9. Western steers       | 20. Range cows    |
| 10. Corn-fed westerns   | 21. Hay fed       |
| 11. Fed westerns        | 22. Fed           |

been furthered by the maintenance of government reporting stations at various public live-stock markets. Cattle and calves for slaughter are divided into seven classes in the standard sets of classes and grades recommended; steers, baby beef, heifers, cows, stags, bulls and veal calves. Some of these classes are further subdivided into subclasses based on weight, such as heavy-weights, medium-weights and light-weights. The classes are then divided into grades the most important of which are prime, choice, good, medium, and common. Feeder and stock cattle and calves, also, are included as general classes and are divided into subclasses and grades very similar to the classification applied to cattle and calves for slaughter.

Standard classes and grades for hogs, sheep and lambs have also been promulgated by the Department. A convenient source in which to find the classifications used by the Department in reporting live-stock prices is the weekly price report published in *Weather, Crops and Markets*.

### THE GRADING OF WOOL

Though much wool is purchased locally without being graded in any way, this staple is systematically classified and graded at the large central markets. The domestic wools of the United States are divided into *classes* according to their geographical origin, the usual territorial groups being (1) Ohio, Pennsylvania, and West Virginia; (2) Michigan and New York; (3) Kentucky and similar districts; (4) California; (5) Texas; (6) Oregon; (7) Montana, Wyoming and Idaho, the wool there grown being known as "territory" wool; (8) Utah; (9) Nevada; and (10) "pulled" wool which is the short wool removed from the skins after slaughter and originates mainly in the large packing centers. These territorial classes are further classified, according to the extent of their preparation for spinning, into "unwashed," "washed" and "scoured" wool.

The various classes of domestic wool are variously divided into *grades*, in accordance with the relative amount of merino blood in the sheep, the coarseness or fineness of the wool fiber,

the amount of foreign matter and grease or probable scouring percentage, the length of the fiber, their adaptation for combing or carding, and the time and frequency of shearing. The various classes of eastern wools, although they are not graded the same in every case, are usually divided into the following grades: (1) "picklock" or wool from the pure Saxony merino sheep, (2) XXX or wool resulting from the first cross of the Saxony with the ordinary merino sheep, (3) XX or wool from the full-blooded merino, (4) X or  $\frac{3}{4}$  merino blood wool, (5)  $\frac{1}{2}$ ,  $\frac{3}{8}$  and  $\frac{1}{4}$  blood, indicating relative amounts of merino blood, (6) "fine delaine," or straight merino wool adapted to combing and usually  $2\frac{1}{2}$  or more inches in length and (7) "braid" or coarse wool. The classes of western wool are variously graded in terms of numbers, terms of quality, adaptation for combing or carding ("staple" or "clothing"), spring or fall clip, 12-months', 8-months' or 6-months' clip, or growth in particular territorial regions. The grades of pulled wool are stated in terms of letters and quality.

Foreign imported wools are usually classified and graded in still a different manner. The many classes of imported as well as domestic wools sold in the Boston market and used for price reporting purposes may readily be found in any of the large textile trade journals.

Very recently the Secretary of Agriculture promulgated official standards for grades of wool based on the diameter of fiber. Their adoption is voluntary, but as they were formulated in coöperation with many wool dealers and manufacturers their adoption at important wool markets is anticipated. The Department of Agriculture has made the following concise statement concerning its wool standardization activities:<sup>16</sup>

Official United States standards for grades of wool were promulgated by Secretary Wallace on May 18, to become effective on July 1, 1923. These standards are the result of several years of investigational work by members of the department with the coöperation of wool growers, dealers, and manufacturers.

Seven grades, based exclusively on the diameter of fiber, are

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<sup>16</sup> *Weather, Crops and Markets*, May 26, 1923, p. 525.

used for the purposes of these standards. Other value-determining factors, such as length of fiber, spinning quality, and shrinkage were considered in the investigations. Since, however, there is a more or less constant relation between the diameter of fiber and variations in the other factors, diameter of fiber is considered basic and has been given primary consideration. The grades, in the order of diameter of fiber, from the finest to the coarsest are: Fine, one half blood, three eighths blood, one fourth blood, low one fourth blood, common, and braid.

It is anticipated that these grades will be of great assistance as a basis for commercial wool transactions and a means of determining values for loans on wool stocks stored in Federal licensed warehouses.

The need for wool standards has long been recognized. Prior to the time when the Department of Agriculture was in position to undertake the wool standardization work suggestions were received from several large organizations that the department take steps to create standards for wool and issue copies of such standards for use in commerce. The standards just established are not compulsory, but have been adopted as official by a number of the States.

In the preliminary work of determining the tentative grades; dealers and manufacturers submitted samples representing their ideas of market grades. In this way hundreds of samples representing the many market grades in use were collected and assembled. Finally a set of seven groups, each illustrating the maximum diameter of fiber in each group, was prepared and set up as a possible means of defining the lines of demarcation for seven primary market grades.

On completion of the preliminary work, the set of type samples was submitted to a number of wool and textile authorities called in conference to consider the proposed grades. As the reaction of the conference was favorable to the grades recommended preparation of duplicates of the original set was begun. These sets, suitably mounted and accompanied by appropriate descriptive matter, were made available for release as the "Tentative wool grades" of the Department of Agriculture.

Investigations to determine the practicability of the tentative wool grades were conducted by grading wool according to the tentative standards, by submitting sample sets to authorities for criticism, by providing sets for use in demonstrational and educational work, and by holding public hearings for the discussion and criticism of the tentative grades.

At the close of the field investigations in 1922, preparations were made for holding public hearings in order that final determinations of the standards might be made. Hearings were held in Boston, Philadelphia, and Chicago late in 1922, and in Washington early in 1923. At these hearings, which were attended by producers, dealers, manufacturers, and others, the work accomplished was reviewed, the proposed grades and purposes of the work discussed and criticisms and suggestions invited. Indorsements of the grades were received from representatives of several branches of the industry, and recommendations were made that the tentative wool grades be declared official.

At the final hearing held in Washington the tentative grades were indorsed and their establishment as standards of American nomenclature were recommended by the Joint Committee on Research and Standarization, representing the National Association of Wool Manufacturers, by the American Association of Wool and Worsted Manufacturers, and by the National Association of Worsted Yarn Spinners. This committee further recommended that the department consult with authorities of British wool and textile industries to the end that a correlation of the United States and British classifications be effected, and a system of nomenclature worked out that would take cognizance of the wool, amounting to approximately 60 per cent of our consumption, that is now imported.

Since much finer distinctions must necessarily be made in wool for manufacturing purposes than are possible or essential in grading wool in the fleece, an effort will be made to develop a classification that recognizes the greater number of grades employed in the manufacturing industry.

Further steps in the standardization work are (1) the development of a standard terminology for length, (2) development of standards for spinning qualities of the fiber and (3) development of standards for describing or indicating the shrinkage and degree of foreign matter in wool. As these standards are developed their promulgation will follow.

#### LEAF TOBACCO GRADES

Leaf tobacco and fruits are distinctive in that they are frequently graded by the growers before they are sold. Owing to this practice, fruit grading has unavoidably been described

in Chapter XIII, and tobacco grading has been briefly referred to in Chapter XII.

As was previously mentioned the leaf tobacco trade recognizes distinct *classes and types* of leaf, the former being based upon its adaptation for a particular use, and the latter upon a combination of qualities such as color, strength, elasticity, body and flavor<sup>17</sup> or a particular method of curing the leaf. These types, however, are sorted into *grades* which represent varying degrees of excellence. As in the case of tobacco types, the properties considered in grading also include color, strength, elasticity, body and flavor, the difference being that the grader considers these properties in detail, and also includes properties such as the perfection of the leaves, whether they are torn, worm-eaten, bruised, or damaged from contact with the soil, their shape, thickness and length, and the part of the stalk from which they are stripped.

The following classification of the type known as bright yellow leaf when sold in the Danville, Virginia, market may be regarded as typical:

**Wrappers.**—(1) Common wrappers: lowest grade of wrapper, and only a grade above a bright filler. (2) Medium wrapper: not uniform in color, dingy, or piebald, but of good form and quality. (3) Good wrapper: tobacco of heavy body, orange color, generally styled mahogany. (4) Fine wrapper: second grade of lemon color, but inferior to the fancy. (5) Fancy wrapper: fine, delicate fiber, silky, fresh lemon color, very leafy, perfect leaves, and the highest class made in assorting.

**Fillers.**—(1) Common: all of the inferior and nondescript grades. (2) Medium: good, rich lugs, and the dark leaves with good body. (3) Good: tips, and the better and brighter heavy lugs and short leaves with body. (4) Fine: all the brightest, best and richest leaves next below common wrapper, and generally of a gray and cherry-red color.

**Smokers.**—(1) Lowest grade: worm-eaten and discolored. (2) Brown and short leaves. (3) Grade above four, and not so colory. (4) Best smooth lugs, which make the highest class of smokers.

**Cutters.**—(1) Thin, papery leaves, thrown out from fine fillers when assorting; lowest grade. (2) Same grade as three, but not

<sup>17</sup> Chap. XII, p. 278.

so colory. (3) Fine cutters, leafy and inferior leaves taken from stalk that produced the best wrappers.

The number of grades differ widely for the various types of leaf tobacco produced and in different growing districts and markets. The grading may, moreover, be performed by different individuals—by the grower, the coöperative association inspector, the packer, jobber, exporter, public inspector, warehouseman or commissionman. It may be done by the grower in the first instance, later to be regraded by packers or other leaf buyers, and it may also be sold by the grower in the ungraded condition, later to be prepared, graded and packed by the buyers in such manner as they prefer or as their market requires.

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## CHAPTER XVII

### COLLECTION AND DISSEMINATION OF CROP AND MARKET REPORTS

A highly important part of the organization of American commerce, particularly of that phase which deals with the sale and distribution of the agricultural staples, is the extensive machinery which has been developed for the collection and dissemination of crop reports. Carriers may be provided to transport the crops to market: local, central and retail markets, elevators and warehouses, exchanges and other market places to facilitate their storage, preparation and sale; but without authentic current trade information the machinery of distribution could not but operate in a haphazard manner, and prices would seldom, if ever, be such as the actual or probable supply and demand naturally warrant.

From the standpoint of their sources, crop reports may be divided into two groups: (1) those issued by the federal and state governments, and (2) those issued by private organizations. The former include the reports published by the United States Department of Agriculture and the Bureau of the Census, and the latter those issued by certain trade journals, exchanges and private statistical organizations. In addition to these public crop reports, there are many strictly private reports which are obtained by large dealers, speculators or others, either directly or through private statistical sources, but, although such reports may at times exert a wide influence upon prices, they are not available to the multitude of producers, dealers and consumers who obtain much of their current trade information from such crop reports as are publicly issued.

#### GOVERNMENT CROP REPORTS

**Purpose of Government Crop Reports.**—As early as 1863 when the Department of Agriculture first appointed a statistician for

the collection of agricultural statistics, and 1865 when the first appropriation of \$20,000 for the express purpose of issuing crop reports was made, it was felt that there was a distinct need for systematically collected crop information and reports. Even prior to 1863—during the period 1839 to 1862—certain crop statistics had been collected in the United States Patent Office. The crop-reporting service of the Department of Agriculture was for many years conducted by the Bureau of Statistics. Since June, 1914, it has been conducted by the Bureau of Crop Estimates, which was later consolidated with other bureaus and in 1922 became the Division of Crop and Live-stock Estimates of the Bureau of Agricultural Economics. The appropriation for the crop reporting service in 1923 was \$303,600. In justification of this expenditure the department points to the following purposes of its crop-reporting service:

1. To provide reliable information to producers, consumers and dealers as to actual yields and conditions of crops outside of their own immediate community.

2. To enable market centers to better balance supply against demand in defining what prices are warranted by natural conditions.

3. To insure stability to the extent permitted by natural conditions.

4. To insure so certain an estimate that interested parties cannot discredit or swamp the government reports with their own private estimates.

5. To enable producers to know the facts as to the promise of prices so that they may not be led to sell at prices wrongfully quoted too low.

6. To create confidence and certainty in general business conditions, to the extent that such conditions are influenced by the country's crops.

7. To insure reports so frequently and so soon after changes have occurred in crop conditions or yields that speculative uncertainty may be reduced to a minimum.

8. To provide information which will be of use to the carriers

in the distribution of freight equipment before and during the crop-moving seasons.

9. To assist farm implement, hardware and other manufacturers, and wholesale, jobbing, and retail merchants in so far as the production and distribution of their wares may depend upon the farming population.

**Organization of Crop-reporting Service of Department of Agriculture.**—The value of the crop-reporting service lies chiefly in the vastness of its sources of information, the disinterested character of the Bureau of Agricultural Economics, and the frequency and promptness with which the crop reports are issued. A brief outline of the organization and methods of the service will serve to show why its crop reports, although admittedly but estimates, are eagerly awaited by the agricultural trades and exert a widespread influence on the price of the agricultural staples.

The monthly estimates of the bureau are based upon reports received from a huge number of correspondents located in all the farming and agricultural trade communities of the United States, and upon a smaller number of expert reports received from state agricultural statisticians. Its sources of crop information may be classified as follows:<sup>1</sup>

1. Reports are received from 23,772 *township crop-reporters*, who are farmers residing in the farming townships throughout the country. Their reports are made voluntarily and without pay on printed blanks mailed to them by the Bureau of Agricultural Economics.

2. Similar voluntary reports are received from about 2,600 principal *county reporters*, who differ from the former in that they report for an entire county instead of their immediate vicinity or township. They make their report on printed blanks obtained from the Bureau and obtain their information from personal observation and from voluntary reports received from two to four so-called "county aids" or assistants.

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<sup>1</sup> U. S. Bureau of Crop Estimates, Government Crop Reports, *Circular 17*, revised, pp. 14, 15; Joint Commission of Agricultural Inquiry, Part IV, pp. 237, 238. Letter from statistician in charge Sept. 16, 1923.

3. The bureau sends special blanks to a large list of *special correspondents* who are not necessarily farmers but who are nevertheless in a position to furnish valuable information. Thus in the grain trade it sends blanks requesting information on particular matters to 21,445 millers, elevatormen and warehousemen, grain dealers and grain carriers, and in the cotton trade it similarly requests information from 20,000 gineries and 21,789 other correspondents interested in cotton. The bureau, moreover receives reports from thousands of additional sources as follows: field aid, 30,364; live stock, 27,846; special price, 7,839; truck, 8,700; bee, 7,388; potato, 7,555; and individual farmers, 50,000.

4. The bureau also receives reports from so-called *state agricultural statisticians* of whom there is one for each state or group of smaller states. They are persons who devote a part of their time for a small salary to reporting for each state as a whole the same information as is asked of township and county correspondents. They receive reports from voluntary local correspondents to whom they mail printed blanks, and they send the average for each state to the bureau as an independent estimate. Those in the larger states divide their state into about nine sections for each of which they compute a straight average, and then compute a weighted average for the entire state by assigning to each section a weight proportionate to its relative importance.

As the reports of township, county and special correspondents are received by the Bureau of Agricultural Economics they are tabulated on large sheets so as to make them available to the Crop Reporting Board which makes the final estimates. In order to prevent a clerk from obtaining advance knowledge as to any particular state, each sheet, before the figures are added and averaged, is cut into two parts so that no names or marks indicating the state to which the estimates belong remain, and the part containing the names of the counties and state is kept in a locked drawer by the chief of division. The reports from the state agricultural statisticians, which are of particular importance, are mailed to the Secretary of Agriculture in special

envelopes or telegraphed to him in cipher to be kept in a locked safe until the morning of the report. The Crop Reporting Board, before which all the necessary information concerning the speculative crops is finally placed, consists of from five to eight experts and the chief of the Division of Crop and Live Stock Estimates who is the permanent chairman. The board works in a locked room having no telephone or other outside connection, and the final results are given simultaneously to the telegraph companies, reporters and all applicants to be conveyed to the exchanges, the press and to all interested parties. As is stated by one of the statisticians of the crop-reporting service:<sup>2</sup>

When the board has assembled, the reports regarding the speculative crops from state and field agents are delivered by the Secretary, opened and tabulated. The figures by states, from the several classes of correspondents and agents, are placed in convenient parallel columns, a separate sheet being used for each separate crop or question. The board is thus provided with several estimates for each state and each crop, made independently by the respective classes of correspondents and agents of the bureau. Notes and comments of agents and weather reports are read. With all these data before the board, each individual member computes independently, on a separate sheet, or final computation slip, his own estimate of the acreage, condition, yield, or whatever subject is being considered. The results obtained by each member are brought together and compared, state by state, and discussed by the board under the supervision of the chairman, and the final figures for each state decided upon. The estimates by states, as finally determined by the board, are weighted by figures proportionate to their relative importance, the results being a true weighted average for the United States for each subject. Other crops than wheat, corn, oats, and cotton are prepared in the same way except that the entire board does not review them.

As quickly as the board determines upon the final figures by states and the averages for the United States have been obtained by expert computers, a summary is set up on a duplicating machine, and copies of the summary are given to the public.

Several thousand copies of the summarized estimates are

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<sup>2</sup> N. C. Murray, "The Crop Reporting System," *The Annals of the American Academy of Political and Social Science*, Sept., 1911, p. 98.

immediately mailed to newspapers and organized bodies interested in the crop reports. The final estimates are also immediately telegraphed to the Weather Bureau station director of each state, who has copies printed and mailed to all the local newspapers in the state. The details of the crop reports are, however, published a little later in a bulletin known as *Weather, Crops and Markets*.<sup>3</sup>

**Scope of Crop Reports of Department of Agriculture.**—The crop reports cover a wide variety of information, the nature of which naturally varies in different seasons of the year. The principal returns, however, are those relating to:

1. The acreage planted, which is stated by the bureau in terms of acres, but is computed from the estimated percentages reported by its agents and reporters, the percentages representing increases or decreases as compared with the previous year. The estimates are checked by absolute counts of acreage in the field by the bureau's agricultural statisticians, and by its method of testing by sample farms.

2. The condition of the crops, which is reported alike by the bureau and its agents and correspondents in percentages based upon a normal crop of 100 per cent.

3. The yield per acre, which is reported alike by the bureau and its agents and reporters in terms of bushels, pounds or other units of quantity per acre.

4. The total production, which is computed by multiplying the estimated yield per acre by the estimate acreage.

5. The average prices per bushel, pound or other unit received by producers, which are compiled by the bureau from special reports received from its agents and reporters.

6. The total farm value of given crops, which is computed by multiplying the estimated production by the estimated average prices.

7. The stocks on hand at given times, which are computed by the bureau from the reports received from its agents and

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<sup>3</sup> This publication has been variously known as the *Crop Reporter*, the *Agricultural Outlook*, the *Monthly Crop Report*, and now as *Weather, Crops and Markets*.

reporters who report this information in estimated percentages of the total crop harvested.

8. The amounts shipped out of the county of production, which are computed in the same manner as the stocks on hand, and which indicate the estimated volume of grain, cotton or other crops reaching the country's markets.

The reports dealing with wheat, corn, oats and cotton are issued in greatest detail and with the strictest regularity, but the crop-reporting service also covers a multitude of other farm commodities such as barley, rye, buckwheat, flaxseed, peas, rice, tobacco, grass seeds, potatoes, sweet potatoes, beet and cane sugar, cattle, hogs, sheep, horses and other live stock, hay, wool, and to an increasing extent fruits and vegetables. Special information in addition to the usual returns is frequently reported, such as "factors affecting production, supply and market production, supply and market movement, and timely information with respect to progress of planting and other farm work, conditions of roads, growing condition of ranges and pastures, value of farm lands, relative supply and wages of farm labor, prices farmers pay for machinery, equipment, and supplies; and incidently information as to the intention of farmers to increase or decrease production of particular crops in certain areas."<sup>4</sup>

The crop reports of the Division of Crop Estimates are supplemented by the reports of the Weather Bureau, which is also in the Department of Agriculture. The reports of this bureau contains concise statements as to the weather conditions throughout the crop-growing districts, the damage resulting from drought, excessive rainfall, frost and like conditions, temperature and precipitation with departure from normal values, etc., and at times exert important effects upon the prices of the agricultural staples.

**Returns of United States Bureau of the Census.**—Since the crop reports of the Department of Agriculture are based upon the judgments and opinions of its agents and correspondents, the statistics contained in them, although of great value, are but estimates. It is desirable, therefore, that certain of its returns,

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<sup>4</sup> Joint Commission of Agricultural Inquiry, Part IV, p. 238.

particularly those concerning production and acreage, should occasionally be checked up by an actual canvass. This is done by the Bureau of the Census, Department of Commerce, the returns of which are accepted by the Division of Crop Estimates as a basis for revising its estimates.

The Bureau of the Census<sup>5</sup> is especially active in reporting the cotton crop: (1) It publishes ten preliminary reports each year of the cotton ginned to specified dates; (2) "twelve reports giving for each month statistics of the quantity of cotton and linters consumed, the quantity on hand in consuming establishments and in public storage and in compresses, the quantity imported, the quantity exported, the number of active consuming cotton spindles," and the number of spindle hours operated for each cotton spinning mill; (3) twelve preliminary reports of "cotton received, crushed, and on hand, and of cottonseed products, manufactured, shipped out and on hand"; (4) an annual report on "cotton production"; (5) a final report which for the year ending July 31, 1922 was presented in several sections: (a) supply and distribution of cotton and linters; (b) annual production of cotton; (c) "consumption and stocks of cotton and number of spindles in the United States, together with detailed statistics of spindles, cotton consumed, and cotton on hand, including comparative figures for previous years; (d) imports and exports of cotton for the year ending July 31st, with comparative figures for previous years; (e) world's cotton production and consumption, and number of cotton spindles by countries and stocks of cotton; and (f) cotton seed received, crushed, and on hand and products manufactured, shipped out, and on hand with comparative data for earlier years."

The census returns are obtained mainly by actual canvass of the ginneries, delinters, dealers and merchants, warehousemen, cotton mills and other concerns handling cotton, each reporting on the volume of its own business. The returns of exports and imports included in its reports on supply and distribution are, however, compiled from reports of the Bureau of Foreign and

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<sup>5</sup> Bureau of Census, *Bulletin No. 150*, Season of 1921-1922, p. 6.



Domestic Commerce of the Department of Commerce which obtains them from the customs records.

Once in each decade the Census Office also makes a canvass of other agricultural crops, reporting for each a detailed statement of acreage, production, total farm value, average yield per acre, average farm value per bushel or other unit of quantity, and in some instances additional information. These census returns, particularly those of acreage and production, serve as a check upon the current crop reports of the Department of Agriculture, and are used by that department as a means of periodically revising its estimates.

**United States Bureau of Foreign and Domestic Commerce.**—The official returns of the exports and imports of farm products—their value, volume, ports of shipment and receipt, countries to which exported and from which imported—are annually compiled and published in the United States Commerce and Navigation Report by the Bureau of Foreign and Domestic Commerce of the Department of Commerce. This bureau also publishes less detailed monthly returns of exports and imports in the Monthly Summary of Foreign Commerce. Its reports are compiled from the records of the United States Customs Office of the Treasury Department.

**State Reports.**—The departments, bureaus, boards or commissioners of agriculture, horticulture or dairying of many of the principal farming states compile and publish statistics of the agricultural industries within particular states. Their reports, however, are usually annual, and their scope is in most cases limited to acreage, crop production, live stock on farms, production of dairy products or other annual returns. The grain inspection departments, warehouse registrars, railroad and warehouse commissions or public service commissions of some of the western agricultural states also publish annual reports showing the number of cars or amount of grain publicly inspected, the receipts and shipments of grain to and from elevators and central grain markets, and other data arising in connection with their supervision of the grain trade.

## CROP REPORTS OF PRIVATE ORGANIZATIONS

**The Visible Supply.**—Among the most important privately collected crop statistics are those concerning the “visible supply” of cotton and the cereals, that is, the stocks of cotton and grain which have gone out of the hands of the producers and are in elevators, warehouses, vessels or other places where they are available for commercial purposes. The visible supply is of vast importance between harvesting seasons, for it then constitutes the principal basis of the cotton and grain trades. The visible supply is due to various causes, and performs the following important functions:

1. Many growers because of inability to handle or finance their crop or for other reasons, sell the bulk of their grain and cotton during or shortly after the harvesting season.

2. The competition existing between primary markets and points of concentration tends to draw grain and cotton from the farms and local markets.

3. Central elevators and warehousemen usually desire their elevators and warehouses to be filled, and the existence of these storage places makes possible a large visible supply.

4. Future trading is particularly dependent upon the visible supply.

5. The visible supply strengthens the consumers’ position, by assuring them that certain quantities of cotton or grain are available to satisfy their needs.

Visible supply returns are collected mainly by some of the large commercial journals through correspondents stationed at all the principal points of accumulation, and are currently compiled and published by them.

**Other Privately Collected Crop Information.**—Various *trade journals* similarly collect and publish current statements showing the concentration of cotton and grain at interior points and seaboard ports, their shipment over various routes, their exportation and home consumption and other items showing their movement and distribution. Some likewise maintain corps of correspondents or otherwise estimate statistics of acreage, condition, and production similar to those collected by the Department

of Agriculture, the private compilations often anticipating the government crop reports.\*

Some of the large *cotton and grain exchanges* also are important reporting agencies. In the cotton trade the annual statistical reports of the secretaries of the New Orleans and New York exchanges, particularly those of the former, constitute valuable statements as to the actual movement and distribution of that portion of the cotton crop which is "in sight" up to the time of their issue. Most of the grain exchanges, moreover, compile and publish annual and current statistics covering their own dealings and the grain trade conducted at the centers in which they are situated, and some of them compile statistics covering larger areas and special items, such as the visible supply and the movement and distribution of grain.

Various *trade organizations*, such as The National Wool Manufacturers Association, which provide them with detailed current statistics concerning all conditions of interest to the trade. Broomhall's Agency, for example, the reportorial staff of which extends throughout the important grain-growing countries, acts as the reporting agency for all the largest grain exchanges in the world.†

Various *trade organizations* such as The National Wool Manufacturers Association and the Union Stock Yards Companies of the principal central live-stock markets, compile valuable current statistics concerning the particular farm products in which they are interested. Similar also are the returns of the larger growers' coöperative marketing and shipping associations which obtain current reports of market conditions, in accordance with which they consign or reconsider the products of their members.

There are also many *commission and brokerage houses*, particularly in the grain trade, who "make a practice of canvassing the intelligent opinion of men located in the grain belt for the purpose of estimating the conditions of the grain, the acreage,

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\* Some of the principal journals and newspapers collecting crop reports are the *New York Journal of Commerce*, *The New York Commercial*, the *Financial and Commercial Chronicle*, *Bradstreet's* and *The New Orleans Times-Democrat*.

† See Bruce D. Mudgett, "Current Sources of Information in Produce Markets," *The Annals of the American Academy of Political and Social Science*, Sept., 1911, pp. 115-118.

etc. A great many correspondents are in daily communication with their firms, and are able to inform the latter of any circumstances of sufficient importance to justify a special investigation."

Finally there are numerous *private crop experts* who are in the employ of large brokerage or commission houses, or sell their information to subscribers. While some of them have published misleading reports for ulterior purposes, others are "men of mature judgment whose business it is to give disinterested and impartial advice on the growing crops, and whose opinions can be depended upon to represent the facts as they know them."

### AGRICULTURAL MARKET REPORTS

The main sources of price and market condition reports in the past have been those of the exchanges and other trade organizations and agencies, and of various trade journals and daily newspapers. The government through the Departments of Agriculture and Commerce from time to time published compilations of commodity prices, but it is only recently that the Department of Agriculture began its work of systematically reporting central market prices and trade conditions. This work is also conducted by the Bureau of Agricultural Economics at the present time.

The market news service of the Bureau in the fruit and vegetable trades,—its scope and purposes,—is described by Department of Agriculture as follows:

Market prices and conditions, together with receipts of car lots, of fruits and vegetables are secured by bureau representatives in 12 of the large consuming and distributing markets in the United States, which information is wired to Washington for distribution to various points in the country by telegraph and by mail, as well as published in local bulletins at points where compiled.

Reports giving market prices, conditions, and other facts pertinent to local conditions are secured in districts of large production by traveling representatives, which information is likewise wired to Washington and distributed from there to market stations and other competing producing sections both by telegraph and mail.

It is estimated that mimeographed reports reach about 100,000 growers, shippers, dealers, carriers, etc., vitally interested in the growing and marketing of fruits and vegetables. In this work the actual growers on the farms are reached with more certainty than in most lines of endeavor. The service is now used and highly valued by thousands of growers, shippers, buyers, and dealers in all parts of the country.

The market reports containing the information outlined in general above are of great assistance to growers in keeping them fully advised with respect to the prices for which their commodities are being sold both f. o. b. and in terminal markets. They enable them to judge as to whether or not they are getting full value for their crop, thus placing them in a position to realize the greatest profit for their labor which conditions justify. They show them the quality and condition of their crop both at shipping point and when it arrives in the central markets and enable them to make such corrections as they may wish or as are justified in their manner of packing and grading to insure the arrival of their produce in the best possible condition. They place before them information which is of great assistance as a means of deciding the acreage to be grown another year based upon last year's experience.

These reports when placed on file and retained for a series of years become very valuable as statistical matter in planning yearly operations. They show the competition to be expected from other producing sections and the rise or fall in production at other points.

The daily market reports contain information of great value to shippers both with respect to movement of car lots and prices. Only by the record of number of cars moving to market and by careful study of car-lot arrivals can a shipper expect to keep fully advised regarding the condition of the market or markets in which he is interested and thus avoid gluts with resultant demoralized prices. They can change the routing or divert their cars to other points as occasion demands. They are placed in a position to judge about what their shipment should sell for on arrival, thus enabling them to work on a closer margin with a resulting benefit both to themselves and the grower in better prices realized.

The daily market reports contain vital information to the dealers in that they show them the probable supply to be expected on their markets each day and the actual prices realized by the trade not only in their market but in other large competing markets for the same period. They keep them fully advised regarding market conditions in the principal producing sections from

which their supplies are derived, the conditions of the crop during growing period, as well as weather conditions which may affect the shipments.

The carriers from whom the report of cars shipped and arrived is received also find the market reports of inestimable value for statistical purposes and for presentation in court for suits in loss and damage cases; also for their development and agricultural agents in furthering the agricultural territory or improving the conditions in the territory now under cultivation for the specific crops best suited.

The market reports are valuable to educational institutions where classes in marketing are conducted for the purpose of giving students an insight into the marketing problem on fruits and vegetables, and thus equipping them for a more successful and active business life.

While various other factors in the marketing of fruits and vegetables receive both a direct and indirect benefit from the market reports, the real benefit is derived by and goes back to the grower in practically all cases either by means of better methods and better facilities or better training for the future.

The service prevents dishonest practices of a few middlemen, such as rendering an account sales of less than the market prices prevailing at the time and prevents buyers at the shipping joint from beating down prices by telling various untruths regarding market conditions.

It puts the producer on an equal bargaining basis with the middlemen by giving him a knowledge of market conditions. This enables him to sell his product for a fair return. It prevents duplication of telegraphic expense. Without a national distribution of market information, each agency desiring information must telegraph to every city from which it needs prices and conditions. The cost of this tremendous duplication of telegrams must be borne eventually by either the producer or the consumer. The national news service makes a part of these telegrams unnecessary.

It secures information regarding destinations, diversions, and other transportation information that no private agency could secure. If a private agency could profitably develop an organization sufficient to compile this information, it would not be desirable to allow such a private organization complete access to the railway records of the shippers.

It causes distribution to the best-paying markets. Without a dependable news service middlemen would tend to ship produce to

the point where they would receive the highest commission (for example, headquarters of the firm), rather than the market which would yield the producer the most. It furnishes a more impartial, accurate, and complete report than any private agency could expect to do. Any private agency would always be open to suspicion and the danger of bias, whereas the Government may be, and is, absolutely impartial.<sup>8</sup>

The Bureau of Agricultural Economics also conducts a market news service on hay, feed and seed through which it provides current information relative to "supply, demand, movement, prices, quality, or condition, etc., of hay, feed, seed, and broom corn in important consuming and distributing markets." Its market news service on dairy and poultry products similarly covers the supply, demand, movement, prices and market conditions for butter, cheese, eggs, poultry, fluid milk, condensed and evaporated milk and milk powder and the production of manufactured milk products. The live-stock, meats and wool division conducts market news services, issues live-stock market reports, meat-market reports and wool reports. The cotton division conducts a systematic cotton quotation news service through which weekly bulletins are issued showing the prices at which various grades of cotton have actually been bought and sold at the principal cotton markets. The grains division similarly reports grain prices and market conditions.

Many special marketing investigations supplementary to its market reporting services are also made by the Bureau of Agricultural Economics. Special investigations of this kind are its studies of the cost of production of farm products, of marketing methods and practices in the cotton, grain, fruit and vegetable, hay, feed and seed, dairy and poultry, live-stock, meats and wool trades, and of warehousing, cold storage, city markets, foreign competition and demand and cost of marketing.

Activities of this kind are typical of the recent realization of the importance of the efficient marketing of agricultural products. Governmental interest has indeed not been limited to that of the Department of Agriculture. The Federal Trade

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<sup>8</sup> Joint Commission of Agricultural Inquiry, *Marketing and Distribution*, ch. XI.

Commission has conducted extensive investigations of various farm products, the Joint Commission of Agricultural Inquiry of Congress has published a detailed report on "Marketing and Distribution," and a comprehensive investigation of market conditions effecting the agricultural trades has been undertaken by the Department of Commerce.

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(See also statistical reports listed on pp. 102, 174, 256, 277,  
294, 317, 351.)

## CHAPTER XVIII

### THE INSURANCE OF AGRICULTURAL COMMODITIES

It is not the purpose of this chapter to describe property insurance as an industry, but rather to outline the purposes and extent to which the agricultural crops are protected by insurance throughout their passage from farmer to consumer. The fire and other property insurance business as such—its organization, manner of quoting rates, etc.—and the insurance of buildings, vessels and other trade facilities, are but indirectly related to the trade in farm products and have been fully described elsewhere.<sup>1</sup> The insurance of farm commodities, however, holds a direct and highly important position in commercial organization, the discussion of which may be classified into (1) rural crop insurance, (2) insurance as the basis of commodity loans, (3) the insurance of stored commodities, (4) the insurance of commodities in mills, factories and mercantile establishments, (5) the insurance of commodities en route, and (6) insurance as the basis of financial settlement.

#### RURAL CROP INSURANCE

**Scope.**—There is great lack of uniformity among farmers with reference to the forms and extent of insurance carried by them. It is a common practice for them to insure their home, farm buildings, farm animals and machinery against loss by fire and lightning, but many neglect the insurance of their crops. Indeed there are many risks, such as grain pests, frosts and drought, which are seldom covered by insurance in the United States because of the great severity of such calamities

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<sup>1</sup> See S. S. Huebner, *Property Insurance* and the bibliography contained therein; also *Marine Insurance*.

whenever they occur, and the relative absence of concerns which underwrite such risks.

The most common form of crop insurance is the insurance against loss by fire and lightning of grain, cotton, hay and other products after they have been harvested and stored on the farmer's premises or in other local storage places. Many farmers, particularly the small cotton growers, at times fail to protect themselves in this way, but the growers of large crops as well as some of less importance regularly protect their harvested crops until they finally dispose of them.

In regions subject to heavy storms farmers in some cases protect their buildings as well as the crops stored in them by purchasing tornado, cyclone, and windstorm insurance.<sup>2</sup> Similarly in the western grain states, farmers sometimes protect their crops against loss from hailstorms by taking out hail insurance policies. In 1919 \$559,000,000 of hail risks were insured in 41 mutual companies, 43 joint-stock companies and 4 state hail insurance departments.<sup>3</sup> Fifty one per cent of the total hail risks in force were insured in Kansas, North Dakota and Iowa. Not only has the total volume of hail insurance increased rapidly during the past decade, but the amount of hail insurance per acre written by the companies increased during the period of advancing prices and resulting enhanced value of farm crops.

Some farmers also protect their growing crops against fire. This form of crop insurance is most common in sections of the west where large fields of grain are not harvested until thoroughly ripe and are then cut and thrashed in a single process. "The insurance takes effect on the grain in the field and as a rule follows it until it is sold or stored in a commercial elevator or warehouse."<sup>4</sup>

Crops may, however, suffer severely from perils other than

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<sup>2</sup> F. L. Hoffman, "Windstorm and Tornado Insurance," *Spectator*, Vol. LXVII, p. 272; A. T. Linnby, "Tornado Insurance," Chap. 65 in H. P. Dunham: *The Business of Insurance*. G. H. Powell, *Coöperation in Agriculture*, Chap. 12; U. S. Department of Agriculture, *Bulletin No. 786*, May 28, 1919; *Bulletin No. 1043*, Jan. 23, 1922.

<sup>3</sup> U. S. Department of Agriculture, *Bulletin No. 912*, p. 11.

<sup>4</sup> U. S. Department of Agriculture, *Bulletin No. 1043*, p. 16.

hail, windstorm or fire. Heavy damage is at times sustained from drought or excessive moisture, from floods, frost, hot winds, winter-kill and other climatic conditions, and from plant diseases, insect and animal pests, defective seed, and other causes. Efforts have therefore been made to provide a more general form of crop insurance.

The first attempts at general crop insurance were made by three joint-stock fire insurance companies operating in the Dakotas and Montana. The severe drought which occurred in large parts of these states coupled with inadequate safeguards by the companies in insuring risks after severe damage had taken place caused them to repudiate their contracts in part, to plead inability to settle in full and in some cases to tentatively settle claims by a return of premiums.<sup>5</sup>

Several years later a few of the larger fire insurance companies began to write contracts designed to provide general crop insurance. In several instances they insured crop damage resulting from causes other than fire, hail, wind, tornado, failure of seed to germinate or failure on the part of the farmer to properly plant, cultivate or harvest his crop, and they specifically included in their contracts loss or damage resulting from frost, draughts, flood, winter kill, insects or plant disease. Comparatively little, however, has thus far been accomplished in the field of general crop insurance and the entire problem is under consideration by a committee of Congress.

Farm animals are frequently insured against loss from fire and lightning in many parts of the United States, but in those regions where live stock constitutes an important source of farm income live stock is also at times insured against loss from disease and accident. In case of the slaughter by federal or state veterinary inspectors of animals infected with contagious disease, the owners are compensated jointly by the federal and state governments, but such compensation does not overcome the need for insurance, because it is based upon the animal's value for meat or other commercial purposes and not upon the real

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<sup>5</sup> U. S. Department of Agriculture, *Bulletin* 1043, p. 17.

value of blooded stock. Much live stock, moreover, is lost otherwise than by order of public veterinary inspectors, and in the absence of insurance constitutes a complete loss to the owner.

Live-stock insurance in the United States—that is, insurance covering disease and accident—is provided mainly by special mutual or regularly incorporated live-stock insurance companies, and has not been developed on a large scale. The policies issued usually protect the owner against loss by death from accident, disease, fire, lightning and cyclone, including accidents such as a “broken leg when found necessary by attending veterinary to destroy the animal’s life.” Some policies, however, specifically exempt the insurance company in case of loss resulting from certain causes such as fire, flood, inundation, snowstorm or blizzard unless otherwise agreed in a special policy clause and additional premiums are paid. The policies, moreover, generally limit the insured value or amount recoverable to one-half or two-thirds of the actual value of the animals insured or to fixed maximum valuations, and prescribe a maximum age limit which varies with the kind of animal insured and the length of time during which protection is granted. In many instances the companies refuse to insure any live stock not kept in fenced-in pastures or other inclosures, thus eliminating range cattle. In spite of these precautions, the risks of live-stock insurance have proved so great that the premium rates charged have deterred the owners of common live stock from generally protecting themselves with insurance.

Live-stock insurance in the United States has thus far been confined mainly to the insurance of horses and valuable blooded cattle. The number of outstanding policies on common dairy or beef cattle has always been small, and common sheep and hogs are seldom insured against loss from disease or accident. Growers of “common stuff” even in case of fenced-in stock, have depended mainly upon such protection as it afforded by the regular fire and lightning insurance which they may carry, but relatively few insuring such stock against the greater risk of loss resulting from other accidents or from disease.

**Sources of Rural Insurance.**—Three groups of concerns provide most of the rural insurance.

1. At a recent date there were 1,950 farmers' mutual fire insurance companies in the United States, a large proportion of which are local coöperative farmers' associations. From these local mutuals as well as from local mutuals whose risks do not consist entirely or largely of farm property, large amounts of fire and lightning insurance are obtained in farming districts. Some of the farmers' tornado, cyclone, wind-storm, hail and live-stock insurance is also obtained through local mutuals, which may depend primarily upon fire or fire and lightning insurance but provide other forms of protection to some extent, or which may specialize in insuring particular agricultural risks. The usual plan is to require a small cash premium, and in case their losses exceed their income to obtain the excess through a system of assessment. Although many local mutuals have failed, others have been successful in spite of the restricted volume of their business, lack of assets, and assessments, because the restricted area of their operation and personal acquaintance of their members tends to prevent overvaluation and to eliminate much of the moral hazard incident to property insurance.

2. Various state mutuals have from time to time been organized for rural insurance. They cover an entire state, portions of several states or larger areas, and have the advantage of coming more nearly within the law of average. They have, however, been less successful than the local mutuals, because their operation over wider areas increases the moral hazard, incurs greater competition with established old line companies, inferior supervision over the selection of risks, and, when many assessments are called, widespread withdrawal of policyholders.

3. Farm risks, particularly fire and lightning, but to some extent also hail, windstorm, live-stock and other forms of rural risks, are also insured in regularly incorporated joint-stock insurance companies. Many of these companies do an extensive business both in cities and country districts and operate throughout wide areas.

4. Farmers sometimes obtain insurance in the so-called Lloyd's associations consisting of "voluntary partnerships of groups of men in which each member agrees to hold himself individually liable for the payment of losses up to a specified amount."<sup>6</sup>

5. State insurance plans for the protection of crops have been inaugurated in several states. State hail insurance departments have been established in North and South Dakota, Montana and Nebraska.

#### INSURANCE AS THE BASIS OF COMMODITY LOANS

The purpose of property insurance in many instances is the desire to obtain credit. In basing loans upon mortgages the farmers are required to insure any farm buildings or equipment which may be pledged, and insurance is similarly important when loans are based upon farm commodities. Farm loans secured by chattel mortgages on live stock sometimes require that the animals be insured; and loans based upon harvested crops usually require insurance against fire losses. Growing crops are less commonly insured and are, therefore, accepted as collateral for but a small fraction of their full value. Loans on stored farm commodities, which are secured mainly at the elevators and warehouses of the central markets where vast quantities of grain, cotton, wool, leaf tobacco and other farm products are stored, are almost invariably dependent upon fire insurance, for the bankers, warehousemen or commissionmen refuse to accept the elevator or warehouse receipts as collateral unless fire insurance policies or certificates are attached.

The insurance certificate, a copy of which is shown in Form No. 38, is a special device, the main purposes of which are to facilitate commodity loans and financial settlement. A dealer may take out a general policy covering all the cotton or other commodity purchased or stored by him during a given period, and then issue certificates against it covering whatever amounts

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<sup>6</sup> S. S. Huebner, *Property Insurance*, p. 65.

are pledged for loans or sold for shipment, thereby immediately protecting the bank making the loans, or the consignee. The policyholder may either present a certificate properly countersigned by an authorized insurance company official or issue it directly and request the company to later acknowledge its

No.

19.

This certifies that.....ha.. insurance by this company, under Policy No....., Entry No..... to the amount of ..... dollars, on .....

terminating ..... day of ..... 19.  
at noon.

Loss, if any, in conformity with the conditions of said policy, to be adjusted with..... and payable to ..... only on presentation of and surrender of this certificate.

Countersigned at Philadelphia, this ..... day of ....., 19...

....., Manager

FORM 38

liability by letter, thus avoiding the delay and inconvenience incident to the issue of a new policy or the assignment of the interest in the policy each time a purchase or sale is made or a warehouse receipt is offered as collateral for a loan. Without either insurance certificates or policies the practice of loaning on farm commodities would be limited and the prevailing method of financing crops would be severely handicapped.

### THE INSURANCE OF STORED COMMODITIES

Farm produce stored in elevators or warehouses is almost invariably insured against loss by fire when used to obtain credit, but it is usually insured even when not pledged as collateral, for its owner likewise desires protection. Farmers



may sometimes neglect their insurance, but the dealers, commissionmen, jobbers, brokers and others who hold most of the products stored in the central markets, are careful to avoid needless risks. The "Universal Schedule," for rating mercantile risks, for example, contains a special "warehouse tariff," quoting insurance rates for over 1,400 commodities stored in warehouses, including nearly all the agricultural products suitable for storage. Each warehouse is assigned a basis rate dependent upon varying factors such as the city in which it is situated, structural materials, proximity to water mains, variety of commodities accepted, rules regarding admittance of employees only, smoking, arrangement of commodities, running aisles and the like. In addition each commodity is assigned a special stock rate in accordance with its inherent desirability as a fire risk. Thus a given grain warehouse or elevator may be assigned a basis rate of 20 cents per \$100, and grain stored in bulk an additional stock rate of 25 cents, making the total premium 20 plus 25 cents or 45 cents per \$100 in contrast with a rate of 20 plus 40 or 60 cents on grain stored in cotton bags.

Dealers frequently carry a general policy covering every bale of cotton, bushel of wheat or other farm commodities stored within a stated period, the insurance company being informed each night as to the amount of the day's purchases and sales. Under this plan the dealer receives a premium bill from the company monthly or on agreed dates for the amount covered and the length of time it was insured.

The sources of fire insurance in case of farm products stored in central elevators or warehouses are principally (1) the regular joint-stock fire insurance companies, many of which underwrite a huge volume of fire insurance risks of all kinds and operate over wide areas; (2) special mutual concerns such as the Grain Dealers' National of Indianapolis and the Grain Dealers' Mutual Fire Insurance Company of Boston, and (3) local fire insurance mutuals operating within the cities in which warehouses are located.

## INSURANCE OF COMMODITIES IN MILLS, FACTORIES AND MERCHANTILE ESTABLISHMENTS

Upon arrival at the mills, factories, wholesale or retail stores, auction warehouses or other places where the farm commodities are sold by actual inspection or are manufactured into finished products, they are again insured against loss by fire. Thus, grain, cotton and wool are insured at flour and textile mills, and leaf tobacco at the tobacco factories and the auction warehouses of the South.

The insurance rates are higher than on similar commodities stored in elevators or warehouses, because the fire risks are greater. The number of employees in mills, factories and stores is larger, many other persons frequent them, rules of conduct are more difficult of enforcement, and in some cases dust and other sources of inflammability are more likely to accumulate.

The principal sources of insurance at this stage in the life of the farm commodity are (1) the regular joint-stock fire insurance companies, (2) numerous so-called "factory mutuals" organized by factory and mill operators coöperatively with a view to reducing the cost of insurance, and (3) the usual local mutuals organized to insure city properties.

## INSURANCE OF COMMODITIES EN ROUTE

The extent to which farm products are insured while being transported depends largely upon the legal liability of the carrier, and this in turn differs widely according to whether they are being shipped by rail or water routes.

**Insurance of Railroad Shipments.**—Farm products shipped by rail in interstate commerce are usually not insured *en route* because the railroads are liable for all ordinary forms of loss, damage and unreasonable delay, subject only to such exemptions as are authorized by common law, the federal statutes and by the uniform bills of lading prescribed by the Interstate Commerce Commission, which became effective in 1922. The railroads are free from complete liability only under certain

conditions: They are not liable for loss, damage or delay caused (1) by "the act of God, the public enemy, quarantine, the authority of law," "strikes or riots"; (2) by the act or default of the shipper or owner, or by requests to hold the freight in transit made by the shipper, owner or other party entitled to make such a request; and (3) by defects or vice in the freight itself or country damage to cotton. They are not liable for (4) differences in the weights of grain, seed or other commodities caused by natural shrinkage. (5) Upon expiration of the free time allowed by tariffs, usually 48 hours, after notice of arrival has been duly sent or given and after placement of the property for delivery at destination or tender of delivery has been made, their liability as carriers ceases, and thereafter they are liable for fire loss or damage only as warehousemen, that is, they are exempted except in case of gross negligence. (6) Their liability as carriers of particular products may be modified by agreements, declarations, freight classifications, or tariffs definitely limiting the maximum amounts collectible, and the courts have held such value limitations to be valid on interstate shipments and have ruled that shippers refusing to accept these conditions may be required to pay freight charges in excess of those stated in the tariffs. Agreements, etc., releasing the carrier from liability beyond stated values are valid in case of freight, other than ordinary live stock, provided the Interstate Commerce Commission authorizes or requires the carriers to establish rates dependent on a declared value.<sup>7</sup>

Interstate live-stock shipments are made in accordance with the terms of the "uniform live-stock contract" which was also prescribed by the Interstate Commerce Commission, effective March 15, 1922, and was discussed in Chapter IX.

In some states the liability of the railroads in case of intrastate shipments is fixed by special state statutes prohibiting them from establishing agreed valuations or otherwise limiting their full liability as common carriers.

The liability of the rail carriers is so extensive in the case

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<sup>7</sup> Amendment to the Cummins Amendment, Aug 9, 1916.

of all ordinary agricultural commodities, except such as are shipped under released value agreements, that they are seldom insured while *en route*. Those shippers, moreover, who do not wish to accept the limited risks imposed upon them in the uniform bill of lading may, upon payment of charges increased 10 per cent, above the regular freight rates, request the issue of a special bill of lading under the terms of which the railroads accepted full liability for loss, damage and unreasonable delay caused by them.

**Insurance of Marine Cargoes.**—The liability of steamship companies and other carriers by water in case of loss or damage of freight cargoes differs from that of railroad carriers, and as a result a large marine insurance business has been developed. It is not intended to describe marine insurance as a business, but to discuss briefly those phases which directly concern the protection of cargoes and freight. The insurance of vessels and the working of marine insurance companies and of Lloyds and other marine underwriting associations have been fully described elsewhere.<sup>8</sup>

The liability of carriers by water is so limited that the shipper cannot hold them responsible for most of the usual risks encountered in marine shipping. Their bills of lading specify their freedom from liability in great detail, and the federal act of February, 1893, known as the Harter Act, stipulates that they are not liable except under certain specified conditions. The liability clauses of the ocean bill of lading prescribed by the U. S. Shipping Board for Shipping Board vessels are as follows:

The vessel shall have liberty to sail with or without pilots, to tow and to be towed, and to assist vessels in all places and in all situations and to take any measures deemed advisable by the master for the purpose of saving life and/or property; to convey goods in craft and/or lighters to and from the vessel at the risk of the owner of the goods; and in case the vessels shall put into a port of refuge, or for any cause fail to proceed in the ordinary course of her voyage, to transship the goods to their destination,

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<sup>8</sup> See S. S. Huebner, *Marine Insurance*.

dispatching notice thereof to the consignee, if named herein (at destination named), and otherwise to the shipper. Neither the vessel, her owners, or agent shall be liable for loss or damage resulting from: Act of God; perils, dangers, and accidents of the sea or other navigable waters; fire, from any cause or wheresoever occurring; barratry of master or crew; enemies, pirates, or robbers; arrest or restraint of princes, rulers, or people, or seizure under legal process; fumigation under governmental orders; riots, strikes, lockouts, or stoppage of labor; saving or attempting to save life or property at sea; inherent vice, nature, defect, or change of character of the goods; insufficiency or absence of marks, numbers, address or description; explosion, bursting of boilers, breakage of shafts, or any latent defects in hull, machinery, or appurtenances, or unseaworthiness of the vessel, whether existing at the time of shipment or at the beginning of the voyage, provided the owners shall have exercised due diligence to make the vessel seaworthy, properly manned, equipped, and supplied. Except when caused by negligence on the part of the vessel, neither the vessel, her owners, or agent, shall be liable for loss or damage resulting from: Heat, frost, decay, putrefaction, rust, sweat, breakage, leakage, drainage, ullage, vermin, or by explosion of any of the goods, whether shipped with or without disclosure of their nature; nor for risk of craft, hulk, or transshipment; nor for any loss or damage caused by the prolongation of the voyage.

General average shall be payable according to York-Antwerp Rules, 1890, and as to matters not therein provided, according to the laws and customs of the port of New York. If the owners shall have exercised due diligence to make the vessel in all respects seaworthy and properly manned, equipped, and supplied, it is hereby agreed that in case of danger, damage, or disaster resulting from faults or errors in navigation, or in the management of the vessel, or from any latent or other defects in the vessel, her machinery or appurtenances, or from unseaworthiness, whether existing at the time of shipment or at the beginning of the voyage (provided the latent or other defect or the unseaworthiness was not discoverable by the exercise of due diligence), the shippers, consignees, and/or owners of the cargo shall nevertheless pay salvage and any special charges incurred in respect of the cargo, and shall contribute with the shipowner in general average to the payment of any sacrifices, losses, or expenses of a general average nature that may be made or incurred for the common benefit or to relieve the adventure from any common peril.

1. This shipment is subject to all the terms and provisions of,

and all the exemptions from liability contained in, the act of Congress of the United States, approved on the 13th day of February, 1893, and entitled "An Act relating to the Navigation of Vessels, etc." This shipment is subject to the provisions of sections 4281-4286, inclusive, of the Revised Statutes of the United States.

2. The value of each package shipped hereunder does not exceed two hundred and fifty dollars (\$250), unless otherwise stated herein, on which basis the freight is adjusted, and the vessel's liability shall in no case exceed that sum or the invoice value (including freight charges, if paid, and including duty, if paid, and not returnable), whichever shall be the less, unless a value in excess thereof be specially declared, and stated herein, and extra freight as may be agreed upon, paid. Any partial loss or damage for which the carrier may be liable shall be adjusted prorata on the above basis.

3. The vessel shall have a lien on the goods for all freights and charges, and also for all fines or damages which the vessel or cargo may incur or suffer by reason of the illegal, incorrect, or insufficient marking, numbering, or addressing of packages or description of their contents.

4. If the vessel be prevented from reaching her destination by quarantine, conditions of weather or surf, shallow water, war, or civil disturbances, the carrier may discharge the goods into any depot or lazaretto, under suitable, available protection, dispatching notice thereof to the consignee if named herein (at destination named), and otherwise to the shipper, and such discharge shall be deemed a final delivery under this contract and all the expenses incurred on the goods shall be a lien thereon.

5. The vessel may commence discharging immediately on arrival and discharge continuously, any custom of the port to the contrary notwithstanding; the collector of the port being authorized to grant a general order for discharge immediately on arrival, and if the goods be not taken from alongside by the consignee directly they come to hand in discharging the vessel, the master or vessel's agent to be at liberty to enter and land the goods, or put them into craft, or store at the risk and expense of the owner of the goods, dispatching notice thereof to the consignee, if named herein (at destination named), and otherwise to the shipper, when the goods shall be deemed delivered, and vessel's responsibility ended, but the vessel to have a lien on such goods until the payment of all costs and charges so incurred.

6. Full freight is payable on damaged or unsound goods, but no

freight is due on any increase in bulk or weight caused by the absorption of water during the voyage. Freight payable on weight is to be paid on gross weight landed from vessel, unless otherwise herein provided, or unless the carrier elects to take the freight on bill of lading weight. Freight prepaid will not be returned after the goods have been loaded on the vessel, goods and/or vessel lost or not lost. If, on a sale of the goods for freight and charges, the proceeds fail to cover said freight and charges, the vessel shall be entitled to recover the difference from the shipper and/or consignee.

7. Goods on wharf awaiting shipment or delivery are at shipper's risk of loss or damage not happening through the fault or negligence of the owner, master, agent, or manager of the vessel, any custom of the port to the contrary notwithstanding.

8. This bill of lading, duly indorsed, shall be surrendered to the vessel's agent in exchange for delivery order.

9. Master portorage of the delivery of the cargo is to be done by the agents of the vessel; the expenses thereof together with tonnage and shed dues, canal tolls, and charges are to paid by the receivers of the cargo.

10. Vessel shall not be liable for: Splits, shakes, chafing or breakage of lumber or logs; damage to metal in slabs, bars, ingots, rods, hoops, plates, etc.; loss of or damage to any articles shipped loose and/or in bundles; loss of broken pieces of same, or for their respective marks; damage to fragile goods or goods not properly packed. Repacking and recoopering shall be done at the expense of the goods unless required as the result of the vessel's negligence.

11. Notice of loss, damage, or delay, must be given in writing to the vessel's agent within (30) days after the removal of the goods from the custody of the vessel, or, in case of failure to make delivery within thirty (30) days after the goods should have been delivered: Provided, That notice of apparent loss or damage must be given before the goods are removed from the custody of the vessel, and proper notation made on the receipt given to the vessel for the goods shall constitute the notice herein required. Written claim for loss, damage, or delay must be filed with the vessel's agent within six (6) months after giving such written notice. Unless notice is given and claim filed as above provided, neither the vessel, her owners, or agent shall be liable. No suit to recover for loss, damage, delay, or failure to make delivery shall be maintained unless instituted within one year after the giving of written notice as provided herein.

IN ACCEPTING THIS BILL OF LADING the shipper, owner, and consignee of the goods and the holder of the bill of lading agree

to be bound by all of its stipulations, exceptions, and conditions, whether written, printed, or stamped, as fully as if they were all signed by said shipper, owner, consignee, or holder, any local customs or privileges to the contrary notwithstanding.

The ocean bills of lading issued by strictly private steamship lines serving American ports do not correspond to this Shipping Board bill of lading in every respect. Some of them are even less liberal to the shipper, and there are instances in which somewhat greater liability is accepted. The Shipping Board bill of lading was devised in partial answer to requests by shippers for reform. The Interstate Commerce Commission, moreover has prescribed a "uniform export" bill of lading which is issued by railroads to shippers requesting a bill of lading that will carry their export shipments from interior points in the United States to foreign destinations. It consists of three separate contracts which apply respectively from the interior point of shipment to the port of export, from the port of export to the foreign port of entry, and from the foreign port of entry to a foreign destination. The second part of this bill of lading which covers the ocean voyage is uniform to the extent that it contains fifteen specific clauses, but it does not bring about complete uniformity because clause 14 provides that "the property covered by this bill of lading is subject to all conditions expressed in the regular form of port bill of lading in use by steamship company on the date of examination of this document, in so far as such conditions are not in conflict with those stipulated in part II of the export bill of lading." Still another movement in the direction of possible uniformity and somewhat greater liability centers around the so-called Hague Rules which in the first instance were the result of a conference held at the Hague in 1921 under the auspices of the Maritime Law Committee of the International Law Association. The original Hague rules were opposed to such an extent that they were later amended. Another international conference was held at Brussels in October 1922 after which the rules became known as the Brussels convention rules. An



effort was made to embody them in an act of Congress in 1923 but the bill did not become a law.

The Harter Act referred to in ocean bills of lading provides that the vessel owner is liable in case of loss or damage arising from (1) "negligence, fault, or failure in proper loading, storage, custody, care, or property delivery"; (2) from failure "to exercise due diligence to properly equip, man, provision and outfit" his vessel; (3) from failure to exercise due care in making his vessel "seaworthy and capable of performing her intended voyage." The vessel owner is not liable, however, for losses resulting from the unseaworthy condition of a properly inspected vessel even should it later appear that it was unseaworthy before leaving port, nor for losses resulting from errors of navigation, provided reasonable care was taken in selecting the vessel's officers and crew.

The vessel owner being free from liability for loss resulting from the principal risks encountered at sea, it is important that the shippers insure their cargoes. They may, moreover, find it desirable to insure prepaid or collectible freight moneys, for ocean bills of lading in many cases contain a clause to the effect "that freight prepaid will not be returned, goods lost or not lost," and another providing "that full freight is payable on damaged or unsound goods."

The usual perils or risks against which protection is granted in marine insurance policies may be grouped as follows: (1) So-called "perils of the sea"; (2) fire; (3) jettison, i. e., the sacrificing in time of need of a portion of the cargo or vessel property for the common safety of the remainder; (4) barratry which in case of cargoes has reference mainly to theft by officers or crew; (5) losses resulting from men-of-war, enemies, pirates, rovers, thieves, reprisals, takings at sea, arrests, restraints, etc., which in present-day practice refers mainly to war risks; and (6) "all other perils, losses, and misfortunes that have or shall come to the hurt, detriment or damage of the vessel or cargo."

The usual cargo and freight policy does not protect the shipper against all possible perils, for the last-mentioned clause is not all-inclusive. It is interpreted so as to include only such

other perils as are similar to those especially stated in the preceding policy clauses. The general cargo policy does not relieve the shipper from losses due to an inherent defect of the commodities shipped or resulting from natural deterioration, or wear and tear. Cargo policies, moreover, usually provide that no insurance will be paid unless the loss or damage to a particular commodity exceeds a stated percentage of its value.

It is possible, however, upon payment of increased premium rates demanded by the insurer, to attach special clauses to a marine policy, covering almost any conceivable peril, for "nowadays all sorts of clauses may be written into a policy of marine insurance, including loss from earthquakes, pilferage, and leakage of liquids; protection on the wharf while awaiting shipment, delivery, or transshipment; breakage, risks from the manufacturer's plant by inland rail through by transoceanic vessel and interior transportation to the warehouse of the consignee, and even risk by mule-back transport over the Andes."<sup>9</sup>

The losses which arise from the perils mentioned above may take various forms:

1. The loss may be a "total loss" either "actual" or "constructive." The former occurs when the cargo is actually lost, completely destroyed, entirely removed from the possession of the owner, or so badly damaged as to be of practically no value. A constructive total loss of cargo occurs when the goods "fail to arrive at the port of destination, and when the cost of restoring any loss or damage and of forwarding the cargo to its final destination, amounts to more than the goods are worth after thus being repaired and forwarded," or when they are so situated that the expense of saving them would amount to more than their value after the expenditure is incurred.<sup>10</sup>

2. In contrast with total losses, a partial loss of cargo or freight may occur, such losses being settled either in accordance with the "general average" or "particular average" rules. The maritime laws of nations provide that losses resulting from the voluntary and deliberate sacrifice of any interest for the

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<sup>9</sup> B. O. Hough, *Ocean Traffic and Trade*, p. 205.

<sup>10</sup> S. S. Huebner, *Property Insurance*, p. 303.

common safety of the entire vessel, cargo and freight shall be prorated among all benefited interests, i. e., it shall be settled in accordance with the "general average" rule. When cargo, masts and rigging or other parts of vessels, for example, are thrown overboard, when the vessel is stranded, or, when in case of fire, water losses are suffered for the common good, all parties gaining by the sacrifice must bear a proportionate share of the loss incurred.

3. A partial loss of cargo or freight may also result from an accident as distinct from one resulting from an order given by the vessel's master, in which case the "particular average" rule is applied. Commodities may, for example, be damaged by coming in contact with sea water or they may be crushed during a storm. Such losses are not sustained for the common safety; they concern none but those especially interested in the damaged commodities and those alone are obliged to bear whatever loss or damage is incurred. Marine policies frequently do not cover such loss unless it exceeds an agreed percentage of its value.

4. A partial loss may also be declared as a result of salvage which is the amount granted by law and custom to third parties for the saving of life and property at sea. Such losses are apportioned among all the benefited interests, as in case of general average.

There are many different types of cargo and freight policies, for there are many underwriting associations and companies and widely varying needs. Thus there are general "cargo," "lake cargo," "river cargo," "cotton," "freight," "war risk," etc., policies. Policies which specify the actual value or agreed value of the commodities insured are known as "valued" policies, and those which omit to do so, as "open" policies. Moreover, policies which specify the name of the vessel in which the commodities are transported are "named" policies, while those which do not specify a particular vessel are "floating" policies. Those which cover a specified voyage are "voyage" policies, in contrast with the "time" policies which provide protection for a period of time. Policies may, lastly, be classified as "interest"

or "wager" policies, according to whether the insured has or has not a real insurable interest in the commodities insured. The latter type of policy is not enforceable by law and its fulfillment depends upon the underwriters' honor, for it is one of the fundamental principles of insurance law that a policy must represent an insurable interest.

As in the case of fire insurance it has become a common practice to issue marine insurance certificates against cargo policies, so as to avoid delay and inconvenience and afford immediate protection to consignees. These certificates, which are similar to those issued in connection with fire insurance policies,<sup>11</sup> may, moreover, be used when international settlements are made by means of documentary bills of exchange.

Cargoes shipped in sailing vessels or in coastwise barges which take the outside or open sea route, and deck loads, are sometimes shipped without marine insurance or are protected only against fire losses. The great majority of all cargoes, however, are regularly insured so as to reduce the shipper's and consignees' risks to the minimum. In c.i.f. shipment the shipper pays the premium on the insurance, because he is in this case required to quote a price which makes full allowance for "cost, insurance and freight." In an f.o.b. (free on board) shipment, on the contrary the insurance premium is paid by the consignee.

#### INSURANCE THE BASIS OF FINANCIAL SETTLEMENT

The function of insurance as the basis for financial settlement is in greatest evidence in the oversea trade because this trade is conducted over water routes and because the documentary bill of exchange is the most widely used method of international settlement. Such bills of exchange are not accepted unless they have attached to them an order bill of lading, an invoice and a marine insurance policy or certificate. Other forms of international settlement are less directly dependent upon marine insurance, yet the protection of the commodities

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<sup>11</sup> See Form 38, p. 429.

shipped also affects the establishment of an open account or the issue of commercial and finance bills. Shippers would be far more apt to demand cash with their orders if the commodities to be shipped could not be insured against loss at sea.

Marine insurance similarly affects domestic settlements in case of shipments via inland or coastwise water routes. Domestic settlements as a whole, however, depend less upon the insurance of the commodities bought and sold because the railroads who transport much the larger share are legally obliged to act as insurers *en route* and therefore obviate the need of attaching an insurance certificate to a domestic documentary draft when settling for commodities shipped by rail. It is obvious, however, that the insurance of farm crops when stored or handled in warehouses, elevators, mercantile establishments, mills, factories or elsewhere until finally disposed of, frequently has a bearing upon the arrangements for financial settlement.

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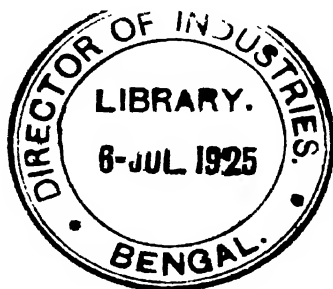
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## CHAPTER XIX

### THE FINANCING OF CROPS

An important part of the organization of the trade in agricultural products is the necessary financial organization. The various steps in the financing of the country's crops may, for purposes of description, be subdivided into: (1) rural credit, (2) dealers' loans on produce, (3) the place of hedging in crop financing, (4) methods of financial settlement and (5) the seasonal flow of crop-moving funds.

#### RURAL CREDIT

The farmers who produce the agricultural crops are required to take the first step in financing them. Those who own their land and have sufficient resources to make necessary improvements, provide needed equipment, and carry themselves from season to season without borrowing, can finance their crops from their own funds. There are many others, however, who are required to operate on credit. This is particularly true of tenant farmers, owners of farms only partly paid for or unimproved, and those who are financially weak, but there are also many progressive landowning farmers who borrow funds for the same reasons that men engaged in other industries operate on credit.

**Long-term Mortgage Credits.**—Rural credit is of two quite distinct kinds which differ as regards length of time, purposes and sources. Long-term credits are required in order to purchase farm lands, make permanent improvements and occasionally to equip farms. They are based primarily upon farm mortgages.

The principal sources in the case of purchase money in many

instances is the individual seller from whom the farmer purchased his land, but long-term credit to be used for this and other purposes is obtained mainly from banks, neighboring farmers, individual lenders in nearby cities, loan agencies representing insurance companies and cooperative loan associations. There are also certain large outside land mortgage banks which make a business of issuing land debentures secured by farm mortgages. Eight states—Idaho, Indiana, Iowa, North Dakota, Oklahoma, Oregon, South Dakota and Utah—make loans on farm mortgages, the loans being limited, however, except in the case of Utah, to such sums as are part of an irreducible school fund.<sup>1</sup> In 1914, moreover, the state of New York provided for the creation of a "land bank" to be associated with local mortgage credit associations, and some rural loans have been made by the building and loan associations which have become so important in the purchase of city real estate. The most important recent development is the credit machinery created under the terms of the Federal Loan Act of July 17, 1916.

**Short-term Rural Commercial Credits.**—Distinct from these long-term mortgage loans are the short-term loans which are designed to carry the farmer from one crop season to another, to enable him to hold his crops for favorable prices, and in some cases to purchase equipment. They are variously based upon crop liens, chattel mortgages, single or indorsed notes, unsecured book accounts, and miscellaneous farm property, warehouse receipts or securities.

It was estimated that in 1910 farm loans aggregating \$2,207,000,000 were either unsecured or based upon collateral other than real-estate mortgages. Loans amounting to about \$390,000,000 were based upon cotton crop liens, the cotton growers—particularly in the eastern cotton belt—pledging their growing crop with local merchants, banks or landlords and central cotton factors for advances of funds or supplies.<sup>2</sup> Crop liens to the extent of \$450,000,000 were similarly utilized by growers

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<sup>1</sup> Wisconsin State Board of Public Affairs (William M. Duffus), "Report on Agricultural Settlement and Farm Ownership," Part I, on *State Loans to Farmers* (1912).

<sup>2</sup> See Chap. VI, pp. 137, 140.



of leaf tobacco, grain, fruit and other farm produce. Loans aggregating \$700,000,000 were based upon chattel mortgages, that is, liens on live stock, farm machinery or other personal property of farmers pledged chiefly to local banks, local money lenders, and in the case of some "cattle loans" to central commissionmen and cattle loaning agencies. Open book accounts with local merchants provided short-term loans of supplies, machinery, etc., aggregating \$250,000,000; and other miscellaneous farm loans amounting to \$417,000,000 were also obtained. More recent developments are the various coöperative credit plans attempted by groups of farmers and the credit facilities being created under the terms of the Agricultural Credits Act of March 4, 1923.

**Shortcomings of Farm Credits.**—It is evident from the above statement that farm credit is by no means an insignificant phase of crop financing in the United States. Yet there are many farmers who have experienced difficulties in obtaining the amount or kind of credit or the favorable terms desired, thereby hampering to some extent the purchase, improvement and equipment of farm lands, and obliging many farmers to dispose of their crops at times when in their judgment the market prices are unfavorable.

The specific obstacles most frequently complained of have been various:

1. A fundamental difficulty has been the inadequacy of the sources of farm credits. About six-sevenths of the country's farm loans were in the past derived from strictly local and nearby sources such as local banks, general stores, neighboring farmers and local money lenders. Only about one-seventh of the credit was supplied from outside sources. The resources of the great banking and financial centers of the United States entered the field of rural credit in but a limited degree.

The national banks were until the enactment of the Federal Reserve Act of 1913 prohibited from loaning on real estate or accepting as commercial paper the farmer's promissory notes running over ninety days. The first of these provisions debarred such banks almost entirely from long-term farm loans,

and the second seriously limited their usefulness as sources of short-term credit because a loan for ninety days is usually of insufficient length for agricultural purposes. Commercial banks, moreover, aside from any legal requirements, have preferred industries, the wares of which move more constantly and can be turned over daily or on short notice.

The Act of 1913 remedied the legal situation in part by permitting national banks not situated in central reserve cities to make loans based on improved and unencumbered farms situated within their respective districts, for periods not exceeding five years and amounts not exceeding 50 per cent of the farm's value, the total not to exceed 25 per cent of the banks' capital and surplus or one-third of its time deposits. It also permitted reserve banks to rediscount notes, drafts and bills of exchange issued for farm purposes or based on live stock, provided that the maturity does not exceed six months or the total does not exceed in amount such percentage of its capital as is to be fixed by the Federal Reserve Board.

2. There has been some difficulty in obtaining farm credits of satisfactory term length. The returns of insurance companies, for example, show that in case of long-term loans the usual length of farm mortgages is five years, although some of them run for periods of seven to ten years. What many farmers desire for purposes of purchase and permanent improvement is a loan running for a period of from 20 to 35 years so as to extend practically from one farm generation to another. Such credits were provided by some of the land mortgage companies which issue mortgage debentures, but such concerns have since the nineties been limited in number. Those farmers, moreover, who desire short-time loans, often require a term exceeding 90 days and therefore find a poor market for their notes as compared with the commercial paper issued in industries not so dependent upon seasonal crops.

3. In many parts of the United States the trend of discussion concerning farm credits was directed principally toward the reduction of interest rates and other incidental costs. The average rate of interest on farm loans in the United States

before the war was about 7.75 per cent, ranging from an average of 5.8 per cent in New Hampshire to 11.59 per cent in Oklahoma. Nominally they did not exceed the interest rates paid in cities, except in a minority of instances, but there were frequently incidental costs which resulted in the payment of exorbitant real interest charges. To circumvent the maximum interest rates established by law, the sums stated in farmers' notes sometimes were made to exceed the amount actually loaned, or two notes each requiring the payment of interest were drawn, one in favor of an outside loaning institution and the other in favor of the local agency, the notes being based, respectively on a first and second mortgage. At times there were also commissions, abstract costs and renewal fees. In the case of open-book credits or loans of supplies or implements secured by crop liens, exorbitant usury was sometimes concealed in the prices which were charged for the wares so advanced.

4. In case of crop liens an additional source of complaint, particularly in the cotton states, sometimes arises from the grower's loss of control over the sale of his crops, as regards both method and time of sale.

**The Federal Farm Loan Act.**—It soon became manifest that the Federal Reserve Act of 1913 did not provide the credit facilities needed by farmers. The efforts of Congress to remedy the shortcomings of the long-term credit situation resulted in the Federal Farm Loan Act of 1916, as amended to date, which provides for two general credit plans based on land mortgages.

1. A federal land bank was created in each of twelve federal land bank districts, and these banks are authorized, with the approval of the Federal Farm Loan Board, to establish additional branch banks. Subject to restrictions\* contained in the act and imposed by the Board, these federal land banks are authorized to issue and sell farm loan bonds; purchase qualified first mortgages; hypothecate mortgages as security for bond issues; charge fees for appraisal and determination of title, legal

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\* Special restriction applicable to Alaska and Porto Rico branch banks are imposed in amendment of March 4, 1923.

and recording services, and engage in other activities incidental to their main function of providing long-term credit.

The first mortgage loans of the federal farm loan banks are made either through so-called "national farm loan associations" or through agents approved by the Board. It is intended that the principal medium through which loans shall be obtained from the federal farm loan banks shall be national farm loan associations organized by groups of farmers under the terms of the act and regulations of the Board. Borrowers become shareholders in an association, and the associations in turn are required to subscribe to stock of the Federal land bank in their district to an amount equal to five per cent of the loans applied for. Interest rates are limited to six per cent and may not exceed by more than one per cent the interest paid on farm loan bonds. Commissions may not exceed one-eighth of one per cent semi-annually of the unpaid principal of loans. Loans may be obtained for periods extending from five to forty years. The purposes for which such loans may be contracted are to provide for the purchase of equipment, fertilizers and live stock necessary for the proper operation of the mortgaged lands, for buildings and improvements, or to liquidate indebtedness incurred by the owner of the mortgaged land for agricultural purposes or incurred prior to January 1, 1922. The loans are based upon first mortgages and may not exceed fifty per cent of the appraised value of the agricultural land mortgaged and twenty per cent of the value of permanent, insured improvements. Loans to any one person, however, may not exceed a maximum of \$25,000 and preference is given to applicants for loans of \$10,000 and under.

The federal farm loan banks may also make loans through authorized agents when it appears to the Federal Farm Loan Board that national farm loan associations are not being formed. Duly incorporated banks, trust companies, mortgage companies or savings institutions chartered by the state in which they have their principal office may be employed as agents. Loans obtained from them are subject to the same conditions as if made through national farm loan associations, and borrowers are in this case

required to purchase stock in the federal land bank to the extent of five per cent of their loans. The agents operate subject to restrictions imposed in the act and under supervision of the Board.

Whether the farmer obtains his loan through a coöperative association or an agent the primary source of the available funds is the sale of land bonds issued by the federal farm loan banks. The bonds bearing a rate of interest not exceeding five per cent, are tax free and may be sold to federal reserve banks, member banks of the federal reserve system and to the investing public. They constitute lawful investments for fiduciary and trust funds and may be accepted as security for public deposits.

2. The second general plan provided for is that so-called "joint stock land banks" may be organized subject to federal land bank organization requirements. They are authorized to make first mortgage loans on farm lands and issue bonds subject to restrictions imposed in the act. The form of these bonds is prescribed by the Federal Farm Loan Board and is different from those issued by federal land banks.

**The War Finance Corporation Act.**—It was more difficult to obtain comprehensive legislation concerning short-term agricultural credits. While permanent legislation was under consideration, something was accomplished through the War Finance Corporation which was originally created during the war and later was extended from time to time. The agricultural credits act of March 4, 1923 further extends the time during which the War Finance Corporation may make advances and purchase notes, drafts, bills of exchange or other securities, to Feb. 29, 1924, and the time during which it may issue notes or bonds to January 31, 1927.

Many loans for agricultural and live stock purposes have been made through this organization and it has made extensive advances for export purposes. Its loans and advances are made in part direct to coöperative associations of producers, but additional sums reached the farmers indirectly through banking institutions and live-stock loan companies. Committees of local

bankers and business men are important in the administration of its activities.

In making loans to a coöperative association each association is required to have complete power to sell or pledge the farm products used as collateral, and they are made for any purpose connected with the growing, harvesting, preparation for market, or marketing of crops, and for breeding, raising, fattening and marketing live stock. No loans are made to further speculative holdings of crops and none for permanent investments in real estate, plant or other fixed assets. Associations are required to sign promissory notes and to provide such security as the corporation demands. The security usually consists of warehouse receipts or other negotiable documents conferring title to the farm products, and the corporation may require indorsement of notes by members of the associations or other additional security. The loans are made for a period not exceeding one year.

**The Agricultural Credits Act.**—An effort was made by Congress to solve the short-term credit situation in a more permanent way in the agricultural credits act of March 4, 1923. Many plans were suggested and bills introduced, and the law as enacted is not fully in line with the views of some of those who were most active in the attempt to meet the short-term credit needs of the farmers.

The act extends the life of the War Finance Corporation and amends the Federal Reserve Act by authorizing federal reserve banks to discount "notes, drafts and bills of exchange issued or drawn for an agricultural purpose, or based on live stock, and having a maturity, at the time of discount, exclusive of days of grace, not exceeding nine months, and such notes, drafts, and bills of exchange may be offered as collateral security for the issuance of Federal reserve notes under the provisions of section 16 of this act: *Provided*, that notes, drafts, and bills of exchange with maturities in excess of six months shall not be eligible as a basis for the issuance of Federal reserve notes unless secured by warehouse receipts or such other negotiable documents conveying or securing title to readily marketable,

staple, agricultural products, or by chattle mortgage upon live stock which is being fattened for market."

It was considered necessary, however, to create additional sources of short-term agricultural credit. Three general sources are provided for: (1) "federal intermediate credit banks," (2) "national agricultural credit corporations," and (3) "rediscount corporations."

The Federal Farm Loan Board is authorized to grant charters for twelve federal intermediate credit banks, one in each of the cities where a federal farm loan bank has been established. Under the supervision of the Board and subject to the provisions of the act these banks may discount or purchase notes, drafts, bills of exchange, debentures, or other obligations, the proceeds of which have been advanced or used in the first instance for any agricultural purpose or for the raising, breeding, fattening or marketing of live stock. They may discount for or purchase from any national bank, state banks, trust company, agricultural credit corporation, incorporated live-stock company, savings institution, coöperative bank, coöperative credit or marketing association of agricultural producers, organized under the laws of any state, or any other federal intermediate credit bank with its indorsement. They may buy or sell debentures of other federal intermediate banks and they may make loans or advances direct to coöperative associations if secured by warehouse receipts, shipping documents or mortgages on live stock subject to a limit of seventy-five per cent of the market value of the products or live stock. Loans, advances or discounts so made shall have a maturity at the time they are made or rediscounted of not less than six months nor more than three years, and interest rates are subject to the approval of the Federal Farm Loan Board.

Federal intermediate credit banks are also authorized to issue collateral trust debentures with a maturity of not more than five years. They are secured by at least a like face amount of cash, notes or other obligations discounted or purchased or representing loans made by such banks and are subject to conditions imposed in the act and to supervision by the Federal

**Farm Loan Board.** They are exempted from taxation but the government assumes no liability for any debentures or other obligations which may be issued.

The act also authorizes the creation of national agricultural credit corporations "for the purpose of providing credit facilities for the agricultural and live-stock industries of the United States." Five or more persons may enter into articles of association as prescribed in the act. These corporations, operating under regulations prescribed by the Comptroller of the Currency have power to make advances, discount and rediscount, or purchase, sell or negotiate notes, drafts or bills of exchange and to accept drafts or bills of exchange issued for an agricultural purpose. The notes, drafts or bills of exchange must have a maturity at the time of discount, purchase or acceptance not exceeding nine months and be secured by warehouse receipts or other documents conveying or securing title to non-perishable and readily marketable farm products or by chattle mortgages or other instruments conferring a first and paramount lien upon live stock which is being fattened for market. They may make advances, or discount, rediscount or purchase and sell, or negotiate notes secured by chattle mortgages conferring a first and paramount lien "upon maturing or breeding live-stock or dairy herds, and having a maturity at the time of discount, rediscount or purchase not exceeding three years." They may also under regulations prescribed by the Comptroller of the Currency and conditions imposed in the act, issue collateral trust notes or debentures with a maturity not exceeding three years, pledging as security any notes, drafts, bills of exchange, or other securities such as warehouse receipts, chattle mortgages or other instruments held by them.

The "rediscount corporations" provided for in the agricultural credits act are large national credit corporations having a capital stock of at least one million dollars and organized to perform a rediscounting function. They are authorized to rediscount notes, drafts, bills of exchange and acceptances conforming to the requirements noted in connection with national agricultural credit corporations, when indorsed by such corpo-



rations or banks and trust companies which are members of the federal reserve system. They may also discount or purchase notes, drafts or bills of exchange issued or drawn by coöperative associations of farmers, provided they "are secured by warehouse receipts or other like documents conveying or securing title to non-perishable and readily marketable agricultural products," and have a maturity at the time of discount or purchase not exceeding nine months. National agricultural credit corporations organized as rediscount corporations are freed from some of the limitations which otherwise apply.

Federal reserve banks may also, subject to limitations, rediscount notes, drafts and bills of exchange for federal intermediate credit banks, and purchase and sell debentures issued by federal intermediate credit banks or national agricultural credit corporations. When the Federal Reserve Board declares that the public interest so requires, federal reserve banks may purchase and sell in the open market, either from or to domestic banks, firms, corporations, or individuals, acceptances of federal intermediate credit banks and national agricultural credit associations.

#### DEALERS' LOANS ON PRODUCE

After farm products are marketed by producers they continue in many instances to be covered by extensive loans to dealers and other purchasers. Dealers or other buyers in order to buy the crops as they are offered by the growers, and to store them in large quantities, frequently pledge the stored products as collateral for loans. They have in the past usually experienced less difficulty than the growers, to obtain loans through regular banking channels because the short-term credit required by them has more commonly conformed to existing banking requirements, their holdings have usually been stored in warehouses acceptable to banking institutions and their records have enabled them more readily to disclose their financial requirements and condition to bankers.

Under normal conditions, dealers in farm products have experienced comparatively little difficulty in obtaining the short-

term credit needed by them in conducting their business. There have been periods of financial stringency when banks were unable or unwilling to accommodate them, but such periods have been exceptional and temporary. The situation which became serious in 1920 was relieved in part by the War Finance Corporation, particularly by its advances to assist in financing exports of farm products.

**Loans on Grain.**—Local dealers at times obtain loans based upon stored grain, but since they usually dispose of most of their holdings shortly after acquiring them, it devolves mainly upon the dealers at the central markets to contract loans of this kind. Vast quantities of grain are stored in the central elevators at the primary and seaboard markets by elevatormen and central grain dealers to be held until they are finally sold to domestic mills or exporters. Meanwhile much of this grain is pledged to banks as the basis for loans, the elevator or warehouse receipts being accepted as evidence of ownership. This so-called "grain paper," being based upon receipts which are carefully regulated by law in the western grain states, the entire trade conduct of the public elevators in fact being subject to public and exchange control,<sup>4</sup> is readily accepted in all ordinary times by many western banks. Indeed some western grain paper is also placed in the eastern banks of the United States and in Canadian banks through commercial paper brokers.

**Cotton Loans.**—The practice of cotton buyers is similar to that of the central grain dealers, although the issue of cotton warehouse receipts is on the whole less subject to public or exchange regulation. The bases of cotton loans differ at the various points in its passage from grower to spinner. When bought at the gin, "gin tickets" issued by the ginning concerns may be pledged at banks for loans of funds; when held at a cotton compress, the "compress receipts" may be similarly used; and when stored in warehouses either at the various interior points of concentration, or at the cotton ports, the warehouse receipts become the basis for loans. When moving from gin to compress or compress to central market before final sale and

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<sup>4</sup> See Chap. IV, pp. 74, 83.

shipment to spinner or importer, the railroad bill of lading may be substituted for the storage receipts as evidence of ownership and be used as collateral for bank loans or advances from cotton factors.

**Leaf Tobacco and Wool Loans.**—Similarly leaf tobacco, wool or other produce suitable for storage, is frequently pledged as collateral for loans or advances either directly with banks or indirectly with warehousemen or central commissionmen. The proprietors of the auction leaf tobacco warehouses of the South frequently make advances on stored leaf, they in turn obtaining loans from local banks, and during the "leaf tobacco war" of 1904-1905 the growers of some districts acting in union obtained loans from outside (New York) banks which accepted a lien on the tobacco. Wool stored at the large eastern and middle-western central wool markets is also pledged for bank loans by the central wool dealers, and in case of consigned wool is sometimes offered by local dealers or growers to obtain advances from commission houses.

**Cold Storage Warehouse Loans.**—Farm produce of all kinds suitable for storage and held in cold storage warehouses is at many central produce markets regularly pledged by central produce dealers, and occasionally by local shippers and growers, to obtain credit. The loans are sometimes obtained from the cold storage warehousemen who are in a better position to judge produce values and come into closer business contact with their clients than the banks. Their loaning function, moreover, is regarded as a convenience by both client and banker, and tends toward careful warehouse management. The bankers to whom they in turn go for credit generally fall into three groups: those who readily loan on produce upon presentation of storage receipts, those who loan only after examination of the stored produce, and those who refuse to accept cold storage produce as the basis for credit or do so only sparingly.

#### THE PLACE OF HEDGING IN CROP FINANCING

The practice of hedging spot grain and cotton transactions on the speculative exchanges is a further step in the financing

of the speculative crops.<sup>6</sup> By enabling grain and cotton buyers to distribute the risk of price changes among speculators and insuring themselves against loss of trade profits, they are able to operate on narrower price margins, pay the farmers relatively higher prices, enter into contracts calling for the delivery in the future of grain and cotton not possessed at the time, purchase almost unlimited quantities for storage, and strengthen their financial standing and credit.

The extent to which dealers can pledge grain or cotton in order to obtain loans from banks is greatly enhanced by the practice of hedging which reduces the danger of losses on the part of grain and cotton buyers, and by the existence of organized exchanges where large quantities of produce so pledged can if necessary be sold in the shortest possible time. Hedging similarly affects credit accommodations not based upon produce liens, for it generally reduces the risks of the grain and cotton trades.

#### METHODS OF FINANCIAL SETTLEMENT

**Domestic Settlements.**—Sales of farm products in the spot produce markets of the United States are settled in various ways:

1. Sales of grain, cotton or other products sold before shipment may be settled by using a railroad order bill of lading. Such bills of lading are made out to the order of the shipper and require the consignee to present the properly indorsed original or yellow copy to the railroad before the latter may deliver the goods to him. The original yellow copy may therefore be taken to the shipper's local bank and when accompanied by an invoice, and in case of water transportation, by a marine insurance certificate, may be used as the basis for a draft drawn on the consignee or on another bank in which he has established a credit. The draft may call for payment at sight, or for periods of say 30, 60 or 90 days, and it may be drawn so as to require actual payment before delivery of the indorsed bill of lading or

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<sup>6</sup> For description of hedging *see* Chap. VIII.

"for acceptance." In the latter case the consignee is obliged to appear at the bank at destination and formally accept the draft in order to obtain the bill of lading but need not settle for the products until the draft matures. By using the order bill of lading the shipper may, however, obtain immediate payment for his shipment through regular banking channels.

2. In case of farm products consigned to a commissionman, broker or factor as is commonly done in the live-stock and fruit trades and not infrequently in the grain, cotton, leaf tobacco, wool and other agricultural trades, the commission concerns usually settle with the purchaser, and after deducting their commission or brokerage fee, transportation costs and any other shipping or trade costs chargeable to the products sold, send the shipper an itemized statement and a check or draft covering the balance due.

3. Shippers of farm staples may also run open-book accounts for buyers, particularly with concerns making frequent purchases, settlement being made periodically or upon presentation of bill.

4. The buyer of farm products may settle with the shipper through the use of so-called commercial credit bills, which are drafts drawn by him on a bank as a commercial credit. Such drafts have no documents attached to them, but are merely drawn on the bank which has agreed to accept them for payment with the understanding that the customer will put the bank in funds before the draft falls due. The bank may extend such credit without collateral, or it may require security in the form of bills receivable, claims against customers, merchandise or similar collateral.

5. Settlement may also be made through "finance bills" which are drawn against stock or bond collateral deposited with a bank. Finance bills are more commonly used by banks than by merchants and are therefore often known as bankers' bills, but sometimes they are also used for purposes of commercial settlement.

6. Cash produce transactions may also be settled by requiring cash payment on delivery or cash with order. Offers

of a discount may be made to induce cash payments, and sometimes it is requested that shipments shall be partly paid for by cash with order, the remainder, to be paid in accordance with some one of the preceding methods of settlement.

**Settlement of Agricultural Exports and Imports.**—All the methods of settlement enumerated above are also utilized in the agricultural export and import trades, but in these trades the settlements based upon the export or import bills of lading, are of paramount importance. The common practice is to draw a draft, known in the foreign trade as a bill of exchange, either upon a designated bank or upon the consignee, the bill having attached to it the original ocean or rail-ocean bill of lading, an invoice showing the nature of the products, and a marine insurance certificate. Such drafts are known as documentary bills of exchange. When drawn upon a bank it means that the purchaser has established a bankers' credit at some recognized bank in London, Paris, New York or other European or American banking center, which upon receipt of the bill with proper documents attached will either pay it on sight or accept it for payment upon maturity. Documentary bills of exchange drawn direct upon the consignee are less commonly used in the foreign trade, but they too may be drawn either for payment or for acceptance, the former bill requiring payment before delivery of the bill of lading and the latter permitting such delivery upon formal acceptance by the consignee who thereby obligates himself to settle the bill when it falls due at the end of say three or four months. Documentary bills of exchange are particularly adapted to the foreign trade, for they reduce the element of risk to both shipper and consignee and enable the shipper to obtain his money as soon as the goods are forwarded. They are particularly useful as a safe method of extending credit to foreign buyers.

It is customary to execute the bills of exchange and all attached documents in duplicate and to forward them in separate mails so as to minimize the risk of loss in transit. It is also important that the attached bills of lading should represent actual commodities to the amount specified in the bill

and invoice. The use of fraudulent and worthless cotton bills of lading severely disrupted the financing of cotton exports in 1911.

A variation of the documentary bill drawn on a confirmed banker's credit is the so-called "Oriental letter of credit" which is sometimes used in the trade with far-eastern countries. In this case the foreign merchant at the time he orders the American products, supplies a letter or statement which is merely an advice to the New York bankers acting as correspondents of the far-eastern bankers that it will probably be safe to purchase drafts drawn on the Oriental firm in question up to certain amounts. No actual confirmed credit has, however, been established in this case and the drawer is not relieved from responsibility, for the advice is not an actual letter of credit.

Commercial credit bills are sometimes used by large exporting and importing firms. Foreign finance bills are also used, particularly the so-called "house bills" which are drawn by American firms on their own branches in Europe, but are now less freely drawn than in the past.<sup>6</sup> Open accounts are run less commonly than in the domestic trade. Cash payment with order is seldom required; and settlement through foreign commissionmen is unimportant because agricultural products are not commonly shipped abroad on consignment.

#### THE SEASONAL FLOW OF CROP-MOVING FUNDS

Until recently one of the features of crop financing was the seasonal flow of bank funds—westward during the crop-moving months and eastward after the bulk of the crops had been sold. Vast quantities of cash are needed in the western grain states during the summer and fall months when cash is required to pay for the millions of bushels of grain which are then marketed by such farmers as do not hold their crops for sale in later months. Until the later 'nineties much of the money sent to the West for crop-moving purposes

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<sup>6</sup> P. M. Warburg, "The Discount System in Europe," *National Monetary Commission Report*, p. 13.

consisted of eastern bank deposits, the western banks being unable to provide sufficient cash from their own resources. Later the western banking situation was greatly improved, and it was no longer necessary to the same extent to call upon the eastern banks for assistance. The seasonal flow of funds continued, however, for many western banks regularly sent a portion of their reserves eastward during the dull season but called upon the eastern banks for its return during the crop-moving season.

It is at this point that the grain and securities markets are interrelated, because many of the funds flowing eastward during the dull season are loaned to brokers and dealers in securities for the purchase of stocks and bonds. Many other factors affect the security market, but in so far as it depends upon the condition of the money market, the eastward flow of funds tends to stimulate security dealings and the westward flow to depress them. The interrelation was especially manifest during the financial panic of 1907 when a money stringency prevailed and many eastern banks refused to return to the western banks the surplus funds which they needed to finance the crops. Had the call of the western banks been heeded the prices of securities would have suffered even more than they did. As it was, the price of grain was abnormally depressed because of lack of sufficient crop-moving funds, and for a time the grain trade was demoralized.

In recent years the seasonal flow of bank funds has been less noticeable, alike because the western banks have been less willing to repeat their experience of 1907 and because it is now less necessary for them to seek outside sources of profit after the crops have been marketed, and less necessary to seek the assistance of eastern banks. The Federal Reserve Act of 1913 may also have affected the seasonal flow of bank funds somewhat, for it provides that after thirty-six months, from date of the establishment of a Federal Reserve Bank in any district no portion of the legally required reserves of any bank organized under the act may be held anywhere except in the bank's own



vaults or in those of the federal reserve bank of the district in which it is situated.

The flow of money to and from New York, which is the financial center of the United States, is affected by other conditions as well as by crop movements and may extend over longer periods of time. As stated in the report on "*Credit*" prepared by the Joint Commission of Agricultural Inquiry:<sup>7</sup> "While it is true that during the period of credit stress and great demand for loans for commercial, industrial and agricultural purposes in 1920 the movement of money was out of the stock market and out of the city of New York to the country districts, it is equally true that in periods of sustained high interest rates in New York or in the stock exchange money flows from the country to New York. Money is a commodity, and like other commodities it flows to the place where it will command the highest price. This is true, whether that place be New York or somewhere else."

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<sup>7</sup> Report on Credit, p. 144.

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## CHAPTER XX

### PRICES OF AGRICULTURAL COMMODITIES

No phase of the trade in farm products has in recent years caused more discussion than the rise and fall in prices which products have undergone since the year 1896 and more practically since the beginning of the European War. In discussing the extent of these fluctuations and their causes, and the factors which determine the prices of farm commodities it is advisable to bear in mind that the trade organization through which such commodities pass in their flow from farmer to consumer varies and that their prices change as they pass from the local to the primary or central markets of the interior and again as they pass to the final purchaser, who may be located in the interior, at the seaboard ports or other distant domestic markets, or in foreign countries. There is no uniform trade machinery, but as in the sale of other commodities it is possible to distinguish at least three primary groups of prices for many of the great farm staples: wholesale or central market prices, growers' local prices and retail prices.

#### WHOLESALE PRICES

Although the crops in many instances pass through the local markets before reaching the great central wholesale markets it is desirable to discuss wholesale prices first, as they constitute the basis alike of farm and retail prices. The wholesale prices are the standard in accordance with which all other agricultural commodity prices are gauged. It is at the wholesale markets that price fluctuations are primarily determined.

The wholesale markets for American farm products in most instances are threefold: the central or primary markets of the interior, the seaboard markets, and the foreign wholesale mar-

kets. Their relative importance as price establishers varies, a limited group usually having a dominant position. In establishing the wholesale price for American grain, for example, the primary grain markets of the interior, particularly Chicago, are dominant; in the cotton trade, Liverpool, New Orleans and New York; in the domestic wool trade, Boston, New York, and Philadelphia; in the live-stock trade the primary live-stock centers of the Central West; while in the leaf tobacco, fruit and produce and dairy products trades the importance of the various wholesale markets is more evenly balanced. The absolute prices of a given farm commodity differ, but, except temporarily, such differences merely reflect varying transportation, selling and other distribution costs, and in some cases import duties. Wholesale agricultural prices, especially in those trades where exchanges have been organized, are national, their entire level fluctuating in relatively close harmony. The wholesale prices for grain and cotton, moreover, are practically world-wide because of the extent of international trade in those staples, the well-organized condition of the world's trade in them, and the larger amount of organized speculation. To a limited extent there is also a world wholesale price for wool, leaf tobacco, live stock, and some of the dairy products produced in the United States.

**Price Index Numbers of Agricultural Products.**—The standardized method of indicating the fluctuations of general price levels is in terms of index numbers based upon actual prices but expressed in percentages, and such index numbers have been computed for the wholesale prices of farm products from 1860 to the present time. Those for the years 1860 to 1890 were compiled by the so-called Aldrich Committee<sup>1</sup> of the United States Senate, and those for later years by the United States Bureau of Labor Statistics, which, as shown in Table XV has readjusted all of them for the years 1860 to 1913 with the average for the period 1890 to 1899 as 100. Those for more recent years are stated in the table XVI, the index number for 1913 being 100.

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<sup>1</sup> Senate Report No. 1394, Part II, 2d Sess., 52d Cong., Finance Committee, 1893.

TABLE XV  
RELATIVE PRICES OF COMMODITIES 1860-1913\*

Year	Farm Prod- ucts	Food, etc.	Cloths and Clothing	Fuel and Lighting	Metals and Imple- ments	Lumber and Building Mate- rials	Drugs and Chem- icals	House- furnish- ing Goods	Miscel- laneous	All Com- modi- ties
1860 ...	117.1	124.1	140.9	129.6	160.2	98.1	252.8	202.3	124.9	137 141.0
1865 ...	239.8	238.5	377.8	296.5	314.9	222.5	435.0	338.2	259.3	235 292.3
1870 ...	167.8	196.2	200.9	204.3	205.3	154.3	297.7	214.1	197.2	156 197.6
1875 ...	170.9	189.4	162.9	183.1	191.7	141.5	258.6	175.9	180.4	170 168.9
1880 ...	133.8	180.0	144.2	142.4	172.6	124.6	275.6	140.4	135.4	150 147.5
1885 ...	120.6	111.9	115.1	102.5	116.8	114.4	140.6	119.1	114.5	103 115.8
1890 ...	110.0	112.4	113.5	104.7	119.2	111.0	110.2	111.1	110.3	103 112.9
1891 ...	121.5	115.7	111.3	102.7	111.7	108.4	103.6	110.2	109.4	103 111.7
1892 ...	111.7	103.6	109.0	101.1	106.0	102.8	102.9	106.5	106.2	103 106.1
1893 ...	107.9	110.2	107.2	100.0	100.7	101.9	100.5	104.9	105.9	103 105.6
1894 ...	95.9	99.8	96.1	92.4	90.7	96.3	89.8	100.1	99.8	96 96.1
1895 ...	93.3	94.6	92.7	98.1	92.0	94.1	87.9	96.5	94.5	93 93.6
1896 ...	78.3	83.8	91.3	104.3	93.7	93.4	92.6	94.0	91.4	90 90.4
1897 ...	86.2	87.7	91.1	96.4	86.6	90.4	94.4	89.3	92.1	88 89.7
1898 ...	96.1	94.4	93.4	95.4	86.4	95.8	106.6	92.0	92.4	91 93.4
1899 ...	100.0	98.3	96.7	105.0	114.7	105.8	111.3	95.1	97.7	96 101.7

TABLE XV (Concluded)

RELATIVE PRICES OF COMMODITIES 1890-1913\*

Year	Farm Products	Food, etc.	Cloths and Clothing	Fuel and Lighting	Metals and Imple-ments	Lumber and Building Mate-rials	Drugs and Chemi-cals	House-furnish-ing Goods	Miscel-laneous	All Com-modi-ties
1900	16 109.5	54 104.2	76 106.8	13 120.9	38 120.5	27 115.7	9 115.7	14 106.1	13 109.8	26 110.5
1901	16 116.9	54 105.9	76 101.0	13 119.5	38 111.9	27 116.7	9 115.2	14 110.9	13 107.4	26 108.5
1902	16 130.5	54 111.3	76 102.0	13 134.3	38 117.2	27 118.8	9 114.2	14 112.2	13 114.1	26 112.9
1903	16 118.8	54 107.1	76 106.6	13 149.3	38 117.6	27 121.4	9 112.6	14 113.0	13 113.6	26 113.6
1904	16 126.2	53 107.2	76 109.8	13 132.6	38 109.6	27 122.7	9 110.0	14 111.7	13 111.7	25 113.0
1905	16 124.2	53 108.7	76 112.0	13 128.8	38 122.5	27 127.7	9 109.1	14 109.1	13 112.8	25 115.9
1906	16 123.6	53 112.6	75 120.0	13 131.9	38 135.2	27 140.1	9 101.2	14 111.0	13 121.1	25 122.5
1907	16 137.1	53 117.8	75 126.7	13 135.0	38 143.4	27 146.9	9 109.6	14 118.5	13 127.1	25 129.5
1908	16 133.1	57 120.6	66 116.9	13 130.8	38 125.4	28 133.1	9 110.4	14 114.0	13 119.9	25 122.8
1909	16 153.1	57 124.7	65 119.6	13 129.3	38 124.8	28 138.4	9 112.4	14 111.7	13 125.9	25 126.5
1910	16 164.6	57 128.7	65 123.7	13 125.4	38 128.5	28 153.2	9 117.0	14 111.6	13 133.1	25 131.6
1911	16 162.0	57 131.3	65 119.6	13 122.4	38 119.4	28 151.4	9 120.3	14 111.1	13 131.2	25 129.2
1912	16 171.3	55 139.5	65 120.7	13 133.9	38 126.1	28 148.2	9 122.9	14 113.7	13 133.2	25 133.6
1913	16 165.8	54 137.1	63 123.7	13 142.2	38 127.5	28 151.8	9 124.1	14 118.1	13 137.1	25 135.2

\* U. S. Bureau of Labor Statistics: Wholesale Prices 1890-1913. Whole Number 149, p. 179. The small figures in each column represent the number of commodities upon which the relative price for each specified group is based.

Table XV shows that the wholesale prices of farm products declined during the years 1892 to 1896, then advanced steadily until 1900, and thereafter fluctuated irregularly but gradually rose to an unusually high level. In 1913 they were 50.7 per cent higher than in 1890, 51.2 per cent higher than in 1900, and 65.8 per cent above the average prices of the decade 1890 to 1899. Not all the farm commodities included in these index numbers underwent the same increase in prices, but the advance in all the great staples was substantial. As compared with the average for the period 1890 to 1899 the wholesale prices of hogs (heavy) in 1913 showed an increase of 89.6 per cent, of beef steers (choice to prime) 67.8 per cent, upland cotton (middling) 64.8 per cent, corn 64.3 per cent, barley 53.1 per cent, oats 39.8 per cent, wheat 26.9 per cent, and sheep (western) 20.8 per cent.

Table XV moreover, shows that the wholesale prices of farm products from 1896 to 1913 increased to a greater extent than the general level of all wholesale commodity prices combined and more rapidly than those of any of the other groups into which the bureau classifies commodity prices. As compared with the increase of 65.8 per cent in the relative prices of farm products in 1913 over the average for the decade 1890 to 1899, the general commodity price level increased 35.2 per cent, food prices 37.1 per cent, the prices of cloths and clothing 23.7 per cent, of fuel and lighting 42.2 per cent, metals and implements 27.5 per cent, lumber and building materials 51.8 per cent, drugs and chemicals 24.1 per cent, housefurnishings 18.1 per cent, and miscellaneous commodities 37.1 per cent.

The general level of farm commodity prices began to advance somewhat during the early years of the war in Europe but as is shown in table XVI a more rapid rise began in 1916 and continued throughout the war and later until 1920.

Prior to the price inflation of 1920 the prices of farm products had undergone a greater rise than the general level of the all-commodities index number, but the great inflation of that year carried the prices of many other commodities to a comparatively higher level. The decline in prices which then

TABLE XVI  
RELATIVE PRICES OF COMMODITIES 1913-1922

Year	Farm Products	Food etc.	Cloths and Clothing	Fuel and Lighting	Metals and Imple-ments	Lumber and Building Materials	Drugs and Chemi-cals	House-furnish-ing Goods	Miscel-laneous	All Com-modities
1913	100	100	100	100	100	100	100	100	100	100
1914	103	102	98	93	85	92	101	100	95	98
1915	104	105	98	88	99	94	134	100	95	101
1916	123	121	127	126	162	120	181	106	121	127
1917	190	167	175	169	231	157	202	125	148	177
1918	218	188	228	170	187	172	215	153	156	194
1919	231	207	253	181	162	201	169	184	175	206
1920	218	220	295	241	192	264	200	254	196	226
1921	124	144	180	199	129	165	136	195	128	147
1922	133	138	181	218	122	168	124	176	117	149
Lowest point in 1921 or 1922	Jan. 1921 114	Jan. 1922 131	April 1922 171	Sept. 1921 181	Mar. 1922 109	Mar. 1922 155	July 1922 121	July, Aug. 1922 173	June, July 1922 114	Jan. 1922 138



occurred was especially rapid and severe in the case of farm products, and carried the prices of the great agricultural staples to a level far below the all-commodities index number. The unequal deflation of prices caused widespread distress in the agricultural industries.

**Index Numbers of General Wholesale Price Levels.**—Since the unusual or special fluctuations in farm commodity prices as compared with the increase and decline in the general level of prices is especially significant because of its bearing upon the causes of price changes, it is well to establish this general price level as definitely as possible. The principal wholesale commodity price index-numbers, in addition to those published by the Bureau of Labor Statistics for the United States, are those compiled by Bradstreet's and by Dun's, for British wholesale markets by the *London Economist*, and Mr. Augustus Sauerbeck; and for Canada by the Canadian Department of Agriculture. There is considerable variation even as between the index numbers representing wholesale prices in the United States, due in part to the varying numbers of commodities and the wholesale markets included in their computation. All of them indicate, however, that the general level of wholesale prices during the period before and throughout the war advanced less rapidly than the wholesale prices of farm products and that after 1920 it declined less than the general level of agricultural prices.

#### WHOLESALE PRICE FACTORS

Though various distinct schools of thought have endeavored to attribute the general movement of prices, including agricultural as well as all other products, to some one cause, the preponderance of evidence tends to show that the rise and fall in the wholesale price of farm commodities was due to a combination of causes.

**1. The Gold Production and Credit Inflation Theory.**—A portion of the rise was doubtless due to the increase in the quantity of money and in the use of credit. According to this conception in its most approved form prices are the resultant of the

$$M V + M^1 V^1$$

following formula.<sup>2</sup>  $P =$

In this formula  $M$

equals the amount of money in circulation in the United States;  $M^1$  the individual bank deposits subject to check;  $V$  and  $V^1$  their respective velocities of circulation; and  $T$  the total volume of trade expressed in dollars. Each of these price factors were, after laborious research, estimated by Professor Irving Fisher,<sup>3</sup> and with the year 1909 as the basis the theoretical general prices for each of the years 1896 to 1909 were computed. The parallel columns of Table XVII show how these calculated prices expressed in index numbers compared with the index numbers of actual prices, including the prices of securities and labor as well as of commodities.

All of the factors in the accepted formula changed during the period 1896 to 1909 but those which changed to the greatest extent exerted the widest influence upon prices. The amount of money in circulation in the United States was estimated to have increased from .87 to 1.63 billion dollars; individual deposits subject to check from 2.68 to 6.75 billions; the velocity of money circulation from 19 to 22; and the velocity of check circulation from 36 to 54. The estimated volume of trade, ( $T$ ), also increased from 209 to 399 billion dollars, but being the divisor the effect of this increase was to reduce prices. Of those factors which tend toward higher prices the greatest gains were in the amount of money in circulation and in the velocity of check transactions. As stated by Professor Fisher:

The four price-raising causes may be arranged in the following order of relative importance:

Except for the growth of  $V$ , prices would have been 1 per cent lower than they were.

Except for the growth of  $\frac{M^1}{M}$ , prices would have been 23 per

cent lower than they were.

<sup>2</sup> Expounded and applied practically by Professors E. W. Kemmerer and Irving Fisher.

<sup>3</sup> See Irving Fisher, *The Purchasing Power of Money* (Revised 1913), pp. 276-318.

Except for the growth of  $V^1$ , prices would have been 28 per cent lower than they were.

Except for the growth of  $M$ , prices would have been 45 per cent lower than they were.

We conclude, therefore, that the growth of the velocity of circulation of money was a negligible factor in raising prices; that the relative growth of deposits and their velocity were large factors; and that the growth of money was the largest. The importance of the growth of money as a price-raising factor was, according to the above figures, almost exactly double that of relative deposits and a little over 50 per cent greater than that of their velocity of circulation.

TABLE XVII

CALCULATED INDEX NUMBERS

Year	Directly (P)	Indirectly
		$\frac{MV + M^1V^1}{T}$
1896.....	63	54
1897.....	64	52
1898.....	66	56
1899.....	74	69
1900.....	80	68
1901.....	84	76
1902.....	89	82
1903.....	87	75
1904.....	85	81
1905.....	91	83
1906.....	97	90
1907.....	97	86
1908.....	92	87
1909.....	100	100

Since the growth of  $M$  was largely dependent upon the increased production of gold it is readily seen how this explanation of the increase in prices came to be known as the "gold theory of prices." Its staunchest advocates, however, do not claim that the increased gold output was solely responsible for the rising price level, for their calculations indicate that a portion of the rise was due to the increased velocity of check

transactions. It is estimated that over 90 per cent of the business of the United States was performed by checks and less than 10 per cent by money. Increased credit transactions as well as the increased gold output were therefore among the foremost causes of the general increase in prices prior to the war.

It is futile, however, to contend that the rise of the wholesale prices of farm products or of any other special group of commodities was due solely to the causes considered in the preceding paragraphs. The above formula could at most serve to explain the increase in the general level of all prices combined. Yet the price of wheat, cotton or any other farm product or of any commodity whatsoever is to some extent a special price which is only partly dependent upon the factors which establish a general level of prices. As was previously stated, the prices of farm products increased to a greater extent than the general level of all wholesale commodity prices combined, and there was wide variation between individual farm products in the extent to which their prices advanced. Similar variations also occur between other commodities. While the index numbers of the Bureau of Labor Statistics show an advance of 66.5 per cent in the price of eggs in 1913 as compared with the average for the decade 1890 to 1899, lard 68.3 per cent, bacon 88.7 per cent, dressed beef 62.4 per cent, yellow pine sidings 74 per cent, and white pine boards (uppers) 113 per cent, the wholesale price of men's boots and shoes increased but 22.6 per cent, house furnishings 18.1 per cent, and the wholesale price of some commodities such as sugar, news and wrapping paper declined. All of these fluctuations varied widely from the advance in the general level of commodity prices.

The unusual advance in the price of farm products was only partly due to the increased amount of currency and the greater velocity of check transactions. Moreover, the exact proportion of the advance chargeable to these factors is not known, because the opportunities for error in the theoretical price calculations mentioned above are obvious. That the calculations were made with exemplary care is admitted, yet some of the principal items are estimates rather than definitely known facts. It is doubt-

ful, for example, whether any two statisticians, working independently, would arrive at substantially the same figure for "total volume of trade" in the United States (T in the price formula). The increase in the general level of commodity prices, likewise, is not definitely established, the advances shown by such general index numbers as have been compiled presenting appreciable variations.

The inflation of money and credit, particularly of credit, from 1913 to 1920 was also responsible in part for the rise of commodity prices, including those of farm products, during and subsequent to the war. Inflation began when the amount of currency and credit in use was not required and offset by greater production and a corresponding volume of commodities to be handled. The great increase in currency and bank credits which occurred in the United States after the nation entered the war, was not followed by a corresponding increase in production. A more dominant price factor was the resulting scramble for labor, materials and capital by some industries at the expense of others. The increased currency and credit enabled the competitors to bid against each other and contributed to the rise in commodity prices without contributing a corresponding volume of production.

**2. The Forces of Supply and Demand.**—An important cause of the special rise in the wholesale prices of farm commodities was the changing relation between supply and demand. Both of these price factors were in turn subject to numerous fundamental underlying influences.

The supply of farm products is a definite price factor, but at different times, different conceptions of it are operative. The ruling consideration in the minds of the buyers and sellers at the wholesale markets may be the acreage planted, the condition of the growing crops, the visible supply in existence, or the total production of the year. The supply may, moreover, be derived from the farms of the United States, or partly from those of foreign agricultural countries. It is, likewise, not the actual supply of the moment which solely governs the prices of farm products, but also the judgment of the buyers and sellers at

the ruling central markets as to the probable supply of the future. Traders are continually discounting the future. Particularly is this the rule in the case of those commodities which are dealt in on well-organized exchanges and products which are not perishable.

Whatever the ruling conception of supply may be at a given moment it ultimately depends upon the total available production of the crops, and this in most cases declined relative to the country's needs. From the statistics of production presented in earlier chapters it may be seen that during the years of greatest price increase before the war the number of cattle, hogs and sheep in the United States declined, and that prior to the year 1914 the crops of corn, wheat, barley, potatoes and wool increased less rapidly than the country's requirements. The crops of oats, rye, leaf tobacco, cotton and rice, on the other hand, continued to increase as compared with earlier years. It is significant that by far the greatest price advances occurred in the case of cattle and hogs, and that with the exception of cotton, prices advanced to the greatest extent in those crops where production made least headway.

A multitude of reasons for the reduced rate of and the actual falling off in the production of some of the great crops have been assigned—increased land values, the movement of population into the cities, higher farm wages, decreased efficiency of farm laborers and a general increase in cost of agricultural production, the relative absence of intensive farming in the United States, in some instances depleted fertility and inadequate use of fertilizers, in others the scarcity of available pastures, or in the wool trade the competition with foreign growers. The influence of production upon the prices of farm products may not however, be considered without at the same time considering the demand for them. Prices may rise even when a bumper crop is produced, and decline when the crop is small as compared with the preceding year, should the market demand for farm products suddenly expand in the former or shrink in the latter case. Production may increase rapidly but if at the same time there is an even greater growth in the demand for farm

products their prices will advance. In 1914, for example, large crops of grain were raised in the United States and grain prices would normally have been lower than in the preceding year, yet record prices ruled largely because the outbreak of the European War created an unusual demand for American grains and flour. Similarly cotton production gradually increased after 1896, yet after 1902 cotton prices were higher than during the preceding twelve years, chiefly because the textile industries alike in the United States and abroad were rapidly expanding and created a demand which until the outbreak of the European War, with its depressing effects upon European textile mills, maintained the average price of raw cotton above ten cents per pound.

The market demand for the farm crops cannot be concretely expressed in the form of bushels, bales or pounds, but it is nevertheless a very definite price factor dependent upon definite present or expected market conditions. Movements of population from the country to the city, the growth of population at home and abroad, the expansion or shrinkage of food requirements in food-importing countries, the development of the world's cotton and woolen mills, foreign tariff rates and inspection regulations, widespread wars which affect the demand for, as well as the supply of the world's farm products, the state of business prosperity or depression, and the increasing or decreasing purchasing power of American and foreign consumers—all of these considerations which variously affect the market demand for farm products are considered by the army of buyers and sellers whose bids and offers determine wholesale prices. As in the case of supply or production, the market demand for farm products is judged both from the standpoint of the present and of the future. The relation between supply and demand is constantly being discounted in the great wholesale markets.

The rapid increase in the prices of farm products and of many other commodities from 1913 to 1920 and the unequal movement of the prices of different commodities was also due in part to the forces of supply and demand. Agricultural production increased, but not sufficiently to meet the enhanced demand for American farm products. Market demand increased in the

United States, the price effect being especially great in case of that portion of the population which suddenly became prosperous as a result of the war. The foreign demand for various farm products and foods produced in the United States, particularly the urgent European demand, must be added to the domestic demand. The increased exports of various farm products referred to more fully elsewhere, do not disclose the full price effect, for the foreign demand at various times was compelling.

The break in agricultural prices which occurred in 1920 and 1921 was not due entirely to the deflation of currency and credit, but also to a readjustment of supply and demand. The European demand for various farm products and foods declined. In some instances, the volume of exports continued at a high level, but the demand nevertheless was shifting to a different basis in that the international trade once more became competitive. Foreign customers were no longer dependent so closely upon the American supply as during the war and for several years following the cessation of hostilities. As the worldwide shortage in ocean vessel tonnage disappeared, many of the previous sources of supply were again available. The industrial depression, moreover, affected not only the domestic and foreign markets for cotton but to some extent also those for other farm products.

The changing volume of currency and credit and the changing relation between supply and demand have been principally responsible for the fluctuations in the general level of prices and for most of the special variations which have occurred in the wholesale prices of farm products. There are other factors, however, some of which bear an important relation to wholesale prices.

**3. Speculation in Farm Products.**—Ordinarily there are several conceptions of produce speculation—one referring to the practice of purchasing or holding farm products for a future rise in spot prices, a second to the making of contracts calling for the delivery or acceptance of spot produce at an agreed future time and price, and a third to the purchase and sale of



"futures" on the speculative exchanges. The first two forms of speculation are not confined to the wholesale markets, even the farmers not infrequently discounting or speculating on the future in these ways, and they are not confined to the trade in farm products. Such speculation is part and parcel of the process of fixing the wholesale prices of farm products in accordance with supply and demand. As was formerly stated the supply which determines prices is not only the amount which reaches the markets at the moment, but also the total available crop and the probable supply of the future as shown by reports on acreage, crop conditions and weather influences, and the demand which determines prices is likewise dependent upon probable future as well as present conditions. Such speculation is universal and its effect is not to advance artificially or depress prices but to adjust them in strict accordance with the conditions of supply and demand as judged by the trade. It tends to eliminate sharp fluctuations throughout the year and to base prices upon probable future as well as upon present conditions, rather than to arbitrarily raise or lower prices.

It is against the third form of speculation, the dealing in cotton and grain "futures" on the speculative exchanges—that the charge of being an arbitrary price factor is most frequently made. The effects of this so-called organized speculation upon spot prices has been more fully discussed in Chapter VIII. Briefly summarized, its usual effects are not to arbitrarily raise or reduce the level of spot prices at the wholesale markets, but (a) to fully discount the future and thereby reach the level warranted by fundamental conditions sooner than it would otherwise be reached; (b) to steady prices; (c) to partially equalize prices throughout a given crop-year; (d) to enforce, so far as possible a world price for cotton and the speculative grains; and (e) to reduce the margin between wholesale prices and the prices received by the farmers or paid by millers, spinners or other consumers.

While these are the normal effects of organized speculation it sometimes exerts a temporary influence upon spot prices not warranted by actual conditions of supply and demand. Usually,

however, the manipulation, corners and similar practices here referred to are the result of produce gambling rather than of legitimate speculation.

**4. Manipulation and Corners.**—While speculators ordinarily endeavor to profit by the skillful forecasting of natural market conditions, a gambling element is sometimes able to temporarily manipulate the price of “futures” artificially, and since spot and future prices are interrelated such manipulation may artificially inflate or depress the wholesale prices of cotton and grain. That its effects, however, are temporary, has been repeatedly shown by the refusal of spot prices to blindly follow unduly inflated or depressed “future” prices.

Corners likewise affect prices differently than legitimate speculation, their intent being to compel the payment of arbitrary prices. Real corners of actual grain, cotton or other farm crops, however, are fortunately rarely attempted because the probabilities of failure are great and the amount of capital required stupendous. Speculative corners, consisting in the cornering of the futures maturing in a particular month, occur more frequently and are more readily carried out, but their price effects are short-lived because the victims make speedy settlement. Spot prices in the central markets of the United States as a whole, moreover, do not follow the arbitrary prices at which the futures of a particular month may sell during a speculative corner. The price effects of such a corner are limited alike in extent and time. Its evils lie chiefly in the losses of the victims who are “caught short” and in the resulting disturbance of legitimate hedging transactions.

**5. Combination and Consolidation.**—Though it is charged at times that the rise of prices in the United States was due to the exercise of monopoly power by combinations of producers, the influence of such combination upon the wholesale prices of farm products has never been of widespread importance. Many coöperative associations of grain, fruit, vegetables and live-stock growers have been formed, but their primary price influence has been upon growers’ local prices and upon growers’ profits rather than upon the wholesale prices paid in the

central markets. They have at times instilled competition into the local markets and they have enabled many growers to ship direct to the central markets, but they have not thus far possessed a monopoly power over wholesale prices. Even the coöperative fruit exchanges which direct the shipment of fresh fruit have thus far endeavored to increase their members' profits by reducing distribution costs and gathering accurate information as to market needs rather than by endeavoring to dictate wholesale prices. Coöperative wool marketing has likewise had relatively little effect upon the prices paid at the leading central wool markets.

The growers' unions which have sprung up in the cotton, leaf tobacco and market milk trades have, at times, had a somewhat greater influence on wholesale prices. The cotton unions have sometimes urged their members to adhere to suggested prices, to store their crop, restrict the output of cotton, and sell through coöperative warehouses. Their effect on wholesale cotton prices has sometimes been appreciable,<sup>4</sup> but has on the whole been of relatively minor importance and has never approached that of monopoly power. The cotton unions have been most active in years of declining prices and have endeavored to prevent severe depressions rather than to force the payment of increased prices. The leaf tobacco growers' associations of the southern states exerted an important influence over prices during the years 1904 to 1908 when by storing their crops and restricting acreage they compelled the large tobacco manufacturers and exporters to pay a higher level of prices. Dairymen's associations have on various occasions been able to influence the prices received for market milk.<sup>5</sup>

While the increase in the prices of farm products has on the whole not been caused by growers' combinations, it is also true that few of them have suffered from combinations of buyers or industrial consolidations. There are no combinations of grain, cotton, wool, fruit or produce buyers or dealers and no flour, cotton, or woollen textile mill consolidations with a monopoly

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<sup>4</sup> See Chap. VI, p. 141.

<sup>5</sup> See Chap. XIV, p. 331.

power sufficiently strong to permanently depress the prices ruling in the wholesale markets. All of these industries and trades are competitive. The presence of a limited number of large meat-packing concerns at the central live-stock markets of the West greatly reduces the amount of competition at these markets, yet it is significant that wholesale prices of live stock have on various occasions advanced to a greater extent than those of grain or cotton. Leaf tobacco prices are the only important exception to the general rule that wholesale prices of farm products have not been seriously depressed by the restriction of competition. The leaf tobacco prices of the years 1899 to 1903 were unduly low, partly because the growth of the so-called "tobacco trust" diminished the competition among buyers.

**6. Cold Storage.**—The storage of fruits, eggs, dairy products and many varieties of farm produce in cold storage warehouses has become an important price factor in that it levels the prices of such perishable commodities from one season to another. The storage of eggs, for example, creates a much increased market in the spring months when large numbers of eggs especially suited to storage are produced, and consequently keeps their price level above what it would otherwise be. These cold storage eggs are gradually placed on the market during the summer and winter months, when the supply of fresh eggs is insufficient to meet requirements, and consequently keep the level of prices during these months lower than it would otherwise be. Since perishable farm products are seldom held in the cold storage warehouses longer than from one producing season to the next, even in those states where statutes limiting such storage to a definite period have not been enacted, it would seem that cold storage has not increased the average price of such commodities throughout the year but has tended to reduce fluctuations between seasons and greatly increase both production and consumption. There is no convincing evidence that the increase in the prices of perishable farm products which occurred after 1896 was caused by the cold storage industry.

**7. Transportation Charges.**—Railroad freight rates influence the wholesale prices of farm products in various ways:

a. They frequently constitute an appreciable percentage of the total prices paid at the central markets, but their importance in this respect varies as between particular commodities and markets. Rates on grain, hay, fruit, vegetables and eggs, for example, usually are important price factors, while those on cotton, leaf tobacco and live stock constitute a smaller proportion of the prices realized at the central markets. The difference is in most instances due chiefly to the relatively low intrinsic value of the former group of products as compared with their bulk, and to the relatively high intrinsic value of the latter group.

Even when railroad freight rates constitute an appreciable percentage of central market prices it does not, however, follow that they are a dominating price factor in the sense that changes in freight rates will cause corresponding changes in wholesale prices at the great central markets where the latter are mainly determined. Other factors usually are of dominant importance and prices at the price determining central markets may decline while freight rates are advancing. The percentage relationship between railroad rates and central market prices does not remain constant, but usually changes when either rates or prices change.

What has been said in connection with railroad freight charges applies also to ocean freight charges. Ocean freight rates are usually reflected in the difference between prices in the central markets of the United States and foreign countries, but as many foreign markets obtain their supply of farm products only partly from the United States and the rates from all American shipping points are not uniform, the entire freight charge is not at all times reflected in price differences. There is, moreover, no uniform rule as to the incidence of export freight charges. The extent to which they are ultimately paid by the American exporter or producer or by the foreign purchaser depends largely upon their relative needs, and varies at different times. In the case of agricultural exports the greatest portion of them is usually shifted to the foreign buyer either directly or in the prices paid by him, but when conditions of

supply and demand are unfavorable to the United States the proportion paid by foreign buyers declines.

b. Freight rates are also responsible for a portion of the difference between the prices ruling at one central market as compared with another. Thus, grain prices at the seaboard markets are higher than those at the primary markets and prices at the various primary markets differ somewhat, partly because of different freight charges.

c. A general increase or decrease of freight charges on a given farm product is often reflected in its central market prices. Freight charges were not, however, the cause of the increase in prices from 1896 to 1913 for it is only recently that the rates of the eastern trunk lines have been generally increased. The general level of freight rates declined until 1899-1900 and then remained practically stationary until the decision of the 5 per cent rate case in 1914. There were individual changes prior to this decision, but not in sufficient numbers to affect the wholesale prices of farm products except at individual points. Individual rate increases differ from general increases in that they more frequently affect the profits of buyers or sellers rather than wholesale prices. The general rate advance which occurred during the war came at a time when prices were advancing primarily because of credit inflation and the existing relation between supply and demand, and the price increase as a whole greatly exceeded the advance in railroad rates. The general advance of 1920 occurred when prices were beginning to decline. It did not cause the decline of the basic wholesale prices of farm products nor did it prevent a further decline. The general rate reduction of 1922 came at a time when the wholesale prices of some farm products at the central markets were again advancing somewhat. Other price factors are usually dominant and there have been many instances when general rate changes did not cause corresponding changes in the basic wholesale prices upon which the prices received by the grower at his local market depend. Rate changes have a far more direct effect upon the prices paid at local markets and upon the net amounts realized by growers whose products are shipped to the central markets.

Railroad freight charges do not consist solely of freight rates, but also of special charges such as those which are at times paid for switching, storage and demurrage, loading and unloading, elevator services, in-transit privileges, cotton compression, spotting cars, reconsignment and refrigeration. The practice of the carriers regarding most of these charges varies. Some of them may be absorbed by the carriers or shifted to the shipper; special services may be performed free of charge at some points although subjected to charges at others; and when special charges are collected there is no uniformity as to their amounts. Since wholesale markets and individual dealers are in many cases in competition with each other there is no general rule as to the inclusion of these charges in wholesale prices. They are added in many instances, but at times their principal effect is upon the profits of the individual buyers or sellers from whom they are collected by the carriers.

**8. Commercial Costs.**—The price effects of the trade costs incurred at the central markets such as commission or brokerage, insurance, inspection and grading, weighing, storage, yardage and feeding costs, are similar to those of freight charges. In so far as they are general in a given trade they are often reflected in the general level of prices. Storage charges incurred at the primary markets, for example, usually have a direct bearing upon grain prices in the later as compared with the earlier months of the crop season. The entrance of more dominant forces may, however, prevent the inclusion of such charges in prices. The extent to which they are reflected in the wholesale prices of farm products or are shifted so as to come directly out of the profits of local shippers or of the buyers and sellers at the central markets varies from time to time and at different markets.

**9. American Import Duties.**—The increase in the wholesale prices of farm products from 1886 to 1913 was not directly due to the imposition of protective import duties, for these duties had not been increased since the enactment of the Dingley Act of 1897. With the exception of temporary interruptions the policy of protecting farm products was one of long standing

and prevailed during many periods of declining as well as of advancing prices.

It is claimed, however, that by restricting imports the high duties on many farm products restricted the available supply and indirectly caused prices to increase. It is only in this indirect way that there could be any relation between the tariff on farm products and the advance in their prices. This possible effect of import duties, however, was greatly diminished in the case of many agricultural commodities. The protective rates on grain, meat animals, meat products and eggs throughout the earlier years of their existence and until after the close of the nineteenth century had practically no effect upon prices in the United States, for the production of a huge domestic surplus and the practical absence of large outside sources of supply made the importation of these products, even had they been on the free list, improbable. Small quantities were imported in the later years preceding the war, but the amounts imported even after the removal of the duties in 1913 were too small to affect prices throughout the United States. The effect of the tariff on the prices of fruits, domestic leaf tobacco and dairy products was restricted, because their importation was confined mainly, although not entirely, to special varieties not produced on a large scale in the United States and the total was small in comparison with the huge domestic output.

The price effects of the tariff on imported wool and sugar have been greater, because these commodities come into more direct competition with the domestic products of the United States.<sup>6</sup> The protection granted to manufacturing industries may also have had an indirect effect upon the prices of farm products in that they created a larger home demand for raw materials and foodstuffs by promoting home industries and the growth of a large industrial population.

The price effects of tariff rates at the present time and in the near future are conjectural because conditions have been abnormally disturbed by the European War. The Act of 1913, maintained the prices of domestic farm products even less than

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<sup>6</sup> See Chap. XI, p. 262.



they were maintained by previous acts because it placed grain, flour, live stock, meats, wool and various additional foreign products on the free list; reduced the rates on leaf tobacco and fruits; and generally "revised downward" the rates on manufacturers. The emergency tariff act of May, 1921 and the tariff act of Sept., 1922 once more offered protection to many farm products. Live stock and meats, dairy products, eggs, grains and grain products, several fruits and vegetables, seeds, hay, flax, and hemp, wool, sugar and leaf tobacco are now in the list of dutiable articles. The President, moreover, is given special powers, subject to limitations, to readjust duties with a view to equalizing differences in cost of production, to eliminate unfair methods of competition and unfair practices in the importation and the sale of imported products, and to combat discriminations against the United States by foreign governments. The extent to which the duties on farm products imposed in the acts of 1921 and 1922 have actually influenced prices to date is impossible to ascertain accurately because the great price movements which have occurred in recent years were caused primarily by other price factors. The protective duties on manufactured as well as farm products imposed on the act of 1922 may in the future have an effect upon the supply and demand for American farm products. They may influence prices somewhat, but in the light of what occurred during periods of past protective tariff laws they will probably not constitute a dominant factor in the great general price movements which may occur in the future.

**10. General Business Conditions.**—One of the striking differences between farm commodities and raw "producers' materials" or manufactures is that the prices of many of the former are less dependent upon general business prosperity than those of the latter. Raw cotton and wool are important exceptions because the demand for them depends directly upon the operation of the world's mills. The prices of the great food crops, however, and of leaf tobacco are influenced to a smaller extent by industrial depression or prosperity, for food is a necessity and only the most dire depression greatly reduces the consumption of tobacco.

However, the prices of foodstuffs are influenced somewhat

by general business conditions. Industrial depression may so reduce the purchasing power of many consumers as to shift their demand from the more to the less expensive foods and cause them to practice food economies. Industrial prosperity on the contrary stimulates wastefulness, careless buying and an abnormal demand for high-grade foods. Business depression may, moreover, be accompanied by a severe financial panic during which the dealers who usually accept almost unlimited quantities of the great farm staples are unable to finance their transactions. During the crop-moving season of 1907 the price of grain suffered an abrupt temporary decline because of the severe "money panic" which caused a shortage of crop-moving funds.

#### GROWERS' LOCAL PRICES

The prices received by the growers of farm products sold in local markets are based directly upon the ruling wholesale prices of the central markets to which they are shipped by the local buyers. They are consequently subject to all the price influences which determine the central market prices, with the exception that they fluctuate less frequently. They do not follow the central market prices with absolute precision, and are not subject to all the myriad of fluctuations which occur in the central markets throughout each business day; but every long extended advance or decline and every daily price change is reflected in the local markets, and in case of substantial price changes at the central markets, local buyers may readjust their prices several times in a single day. This relationship between local and central market prices is particularly close in the grain and cotton trades because the purchasing and distribution organization in these trades has been developed to a high point of efficiency. It is somewhat less close in the local live-stock, wool, leaf tobacco, fruit, produce and other agricultural trades, but the local prices of these commodities are nevertheless based primarily upon the wholesale prices prevailing in the great central markets.

In basing local prices upon central market prices, various deductions are made, the most important being, (1) freight

charges incurred in shipping the products to the central markets, (2) operating costs of the local buyers including wages, insurance, weighing, inspection and cartage, (3) interest, rents, and any other local capital costs, and (4) an additional amount to yield a profit. Local grain buyers usually deduct from the primary market prices the freight charges incurred plus an additional number of cents per bushel to cover all other costs and yield a profit.<sup>7</sup> The local cotton buyers of the large exporting or cotton brokerage concerns are frequently supplied with so-called "limits" which they deduct or add to the price at which cotton "futures" are selling on the New York, New Orleans or Liverpool exchanges.<sup>8</sup> The methods of making the deductions from the central market spot or contract prices varies, but the practice of basing local prices upon central market prices is the general rule except in unimportant local markets which have no regular trade connection with the outside world.

Railroad freight rates usually constitute the largest deduction from the central market price and in case of products which are heavy or bulky as compared with their intrinsic value they sometimes result in comparatively low farm prices or net returns to growers. A rough general comparison may be made between farm prices and railroad freight revenue per net ton mile. They were reduced to index numbers by the Joint Commission of Agricultural Inquiry for the years 1910 to 1921. "From 1910 to 1916 the two lines were side by side in very close relationship to each other. Then began a tremendous increase in the price of farm products, until in 1920 it reached the maximum of 246. Railroad freight rates from 1916 to 1917 show practically no increase. From 1917 to 1920 they increased more slowly than did the price of farm products. In July, 1920, the slump began, which brought the index figures for farm products down from 246 in June, 1920 to 106 in June, 1921. In the same period railroad charges went up from 127 in July, 1920 to 171 in June, 1921. On the basis of the last monthly figures available, in October, 1921, farm products show an index figure of 102

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<sup>7</sup> See Chap. III, p. 45.

<sup>8</sup> See Chap. VI, pp. 144 to 148.

and railroad rates 169. In this period of falling prices for farm products the increased freight charges made the farmer feel more keenly the relation of freight rates to the prices obtained for the products."<sup>9</sup>

The amounts deducted from central market prices are not absolutely inflexible, for they are to some extent subject to *local influences*. In the local grain trade, for example, the number of cents per bushel deducted in addition to freight charges at a given local market is influenced in part by the amount of competition between local buyers, the presence of a coöperative farmers' elevator, the ability of farmers to sell in a nearby rival market, the extent to which certain farmers are holding their grain in storage, and the intelligence of the farming community. Local buyers desire the maximum profit, but local influences affect the allowance for profit which they are able to include in the amount subtracted from the central market price.

The growers' *cost of production* does not directly determine the prices of the great farm staples, because the farmers do not determine the prices which they receive. Their position is radically different from that of the huge industrial concerns some of which possess sufficient monopoly power to control in a large measure the prices which they receive for their wares. Agricultural prices are competitive, and are therefore influenced by the growers' costs of production only *indirectly* in that the failure to pay the farmers profitable prices will affect the volume of products produced by them. Prices may fall below the cost basis temporarily and even for a succession of seasons, but low prices in the long run affect production or supply by causing reduced acreage or a shift from one crop to another.

#### RETAIL PRICES

Many of the principal agricultural commodities are not retailed in their crude condition and consequently retail prices are not regularly quoted except on the finished products into which they

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\* *Report on Transportation*, Part III, p. 10.

are converted. It is not intended to describe fully the manner in which the retail prices of these finished products are determined for they are more appropriately included in a volume dealing with the trade in manufactures.

Some farm products, however, such as fruit, vegetables and produce, dairy products, poultry, corn and oats, hay and straw are more commonly sold in the retail markets. Their retail prices are based primarily upon the wholesale prices of the central markets, various costs and an allowance for profit being added to the latter instead of being subtracted as in the case of growers' local prices. The retail costs which are so added include items such as interest and rents, retail selling expenses, insurance, delivery costs, and losses resulting from the decay of perishable products or insufficient demand for those of inferior quality.

The computation is not, however, as exact as in the case of growers' prices because the retail costs incurred as well as the profits desired, are in many instances interwoven with the aggregate costs and profits resulting from the handling of a large variety of other goods retailed in the same store.

The retail prices of farm products are also affected by local or *special influences*. The keenness of retail competition, for example, affects the allowance for profit which can be added to the wholesale price in a given retail market. Differences in the purchasing power of retail customers, moreover, may cause retail price variations between different cities or even between different sections of the same city. While the wholesale or central market prices throughout the United States fluctuate in relatively close harmony, there are no nation-wide retail prices of farm products. The margin between retail and wholesale prices of farm products varies to an amazing degree and the extent to which retail prices have advanced varies greatly in different parts of the country. The United States Bureau of Labor Statistics reports, for example, that the retail prices of potatoes in 1913 were 45.1 per cent above the average for the decade 1890-1899 in the North Atlantic states, as compared with 46.1 per cent in the South Atlantic states, 48.7 per cent in the North Central states, 49.1 per cent in the South Central states, and 99.4 per cent in

the Western states; and that the retail prices of poultry in these geographical divisions advanced 67.4 per cent, 59.5 per cent, 92.1 per cent, 87.6 per cent, and 34.9 per cent respectively.

The retail prices of crude farm products sometimes lag behind their wholesale prices temporarily, because keen competition between the retailers may induce some of them to continue existing prices until stocks on hand are disposed of even though wholesale prices have meanwhile risen. It also happens at times that when retail prices are raised they undergo a greater advance than the wholesale prices upon which they are based. The retail prices of fresh eggs in 1913, for example, as reported by the United States Bureau of Labor Statistics, were 74.8 per cent above the average for the decade 1890 to 1899, while the wholesale prices during the same period advanced 66.5 per cent; and the retail and wholesale prices of milk advanced 40.2 per cent and 38.4 per cent and of creamery butter 53.2 per cent and about 42 per cent respectively. The bureau reported the average retail prices of the fifteen principal foodstuffs, crude and prepared, to have advanced 67 per cent as compared with an increase of 37.1 per cent in the average wholesale prices of food.<sup>10</sup>

The greater relative advance in retail prices was due principally to the increase in rents and in retail selling and delivery costs. Retail costs were especially affected by the growing practice of selling and delivering small lots. The entire system of retailing through small retail stores—appalling in number—has, moreover, proved expensive to the consumers. It has occasioned a wasteful duplication of facilities and selling forces, and a margin between retail and wholesale prices sufficiently wide to provide a livelihood for a multitude of retailers each of whom, with some exceptions, is dependent upon a limited number of customers. While wholesale dealers of New York and Philadelphia in 1913 usually added from 5 to 11 per cent to the prices which they paid for agricultural food products, the average amount added to the wholesale dealers' prices by the retail trade

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<sup>10</sup> Wholesale index number included from 53 to 57 foods.

was reported to be at least 33 1/3 per cent in the former and 45 per cent in the latter market.<sup>11</sup>

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\* References designated by an \* contain statistics of price margins.



## CHAPTER XXI

### FOREIGN MARKETS AND MARKET INFLUENCES

The methods of exporting and importing the principal agricultural commodities and the volume of the foreign trade in them were described in the preceding chapters. It is desirable, however, to discuss at greater length the entire foreign trade of the United States in these as well as the many additional farm products which are exported and imported, the tendencies which are in course of development, and particularly the foreign markets and market influences affecting agricultural exports. The description of trade organization was confined to the crops in the condition which they are brought to market from the country's farms and ranches—packing-house products, flour, canned goods and similar commodities being excluded because they are manufactures or semi-manufactures and are marketed differently from the raw farm products. Such prepared foodstuffs must, however, be included among the agricultural exports as their exportation has for many years borne a direct and important relation to the foreign as well as to the domestic trade in unprepared foodstuffs.

#### HISTORICAL DEVELOPMENT OF AGRICULTURAL EXPORTS<sup>1</sup>

**Prior to the Treaty of Ghent.**—Agricultural commodities were among the first American exports, southern leaf tobacco and rice and northern grain and provisions being shipped to England, Continental Europe and the West Indies throughout the entire colonial trade era. During the Revolutionary War and

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<sup>1</sup> For detailed history of the foreign trade, including farm exports, see Emory R. Johnson, *History of Domestic and Foreign Commerce of the United States*, Vol. II. The chapters on the Foreign Trade from 1790 to 1913 are by the writer.

the years of the American Confederacy the agricultural export trade was in a depressed condition. With the exception of the years 1808 and 1814, however, foodstuffs were exported in even larger quantities during the period 1790 to 1815 than during the colonial era. Agricultural production increased in the United States and the European wars and various European crop failures caused an unusual foreign demand. Indeed the leadership in the northern states was shifted definitely from the fisheries to the agricultural foodstuffs—flour, wheat, corn and provisions.

A new farm staple—cotton—moreover, assumed the leadership in the export trade of the southern states in 1803, the invention of the Whitney gin in 1793 soon making upland cotton the king of American exports. Meanwhile southern leaf tobacco and rice continued to be shipped abroad in appreciable quantities. The dominant position of the agricultural exports was evident in 1807 when the country's foreign trade reached its maximum point prior to the Treaty of Ghent, 77 per cent of the value of all domestic exports consisting of agricultural commodities.

**The Period 1815–1818.**—Agricultural exports rose to an even higher level in the years 1815 to 1818, the surplus cotton, flour, wheat, tobacco, rice, provisions and Indian corn which had accumulated during the War of 1812 being released shortly after the declaration of peace. In 1818 farm commodities valued at over \$62,800,000 or 85 per cent of the entire foreign trade in domestic products were shipped abroad. One half of the total consisted of raw cotton, which had far outstripped all other agricultural exports.

**The Period 1818–1830.**—The years from 1818 to 1830 constituted an era of general trade recession during which the foreign trade in all the agricultural commodities as well as other domestic products, with the exception of cotton and manufactures, declined both in value and amount. So rapid, however, was the advance in cotton production that in spite of falling prices the exports of this staple increased slightly in value and from 87,000,000 to 298,000,000 pounds in actual volume.

**The Period 1830-1836.**—Then followed six years of general trade improvement. The opening of the Middle West increased the surplus in flour, grain and provisions, which improved transportation facilities made more readily available, and the growth of cotton in the South continued to progress. The agricultural exports rose to a value of over \$90,000,000 annually and comprised over 80 per cent of all domestic exports.

**The Period 1836-1845.**—This buoyancy, however, was short-lived, for a business panic developed in 1837 and the exports during the following decade fluctuated irregularly. None of the important agricultural exports increased with the one exception of cotton which was produced in such large quantities that its foreign shipments advanced from 424,000,000 pounds in 1837 to 547,000,000 in 1846, although falling prices depressed their annual value by over \$28,500,000.

**The Period 1846-1860.**—The period 1846 to 1860 is known as the "golden era" of American commerce for the nation experienced unprecedented prosperity and the foreign trade rose to a hitherto unknown level. Stimulated by the rapid settlement of the Mississippi Valley, by railroad construction, greatly increased farm production, the abandonment of the British corn laws, the severe food famine in Ireland, the growing demand for outside foodstuffs in continental European markets, national prosperity, and by the California gold discoveries with consequent favorable monetary conditions, the entire export trade and particularly the portion depending upon agriculture became unusually buoyant. Cotton exports increased from 1,667,000 bales in 1846 to 3,774,000 in 1860 and from a value of \$42,767,000 to \$191,806,000. Western grain which had gradually entered the foreign trade during earlier years now for the first time became an item of real importance and caused a rapid rise in food exports. The maximum point in food shipments was reached in 1857 when 14,500,000 bushels of wheat, 10,250,000 bushels of corn and 3,712,000 barrels of flour, and breadstuffs of all kinds valued at \$55,500,000 were shipped abroad. Provisions, particularly western meat products, were exported to the value of \$16,600,000 in the closing year of the golden era,

as also were nearly 168,500,000 pounds of leaf tobacco. The value of all agricultural exports combined rose from \$108,600,000 in 1850 to \$260,280,000 in 1860, and even though non-agricultural industries of many kinds were being established, continued to comprise over 80 per cent of the country's entire export trade.<sup>2</sup>

No sooner had the free trade policy been adopted in Great Britain during the years 1846 to 1849 than England became the great foreign market for American farm products, for England led in the cotton textile industry and then as in later years was more dependent upon outside foodstuffs than any other large country. But wider markets were also found in Ireland, Scotland, Germany, Holland, Norway, Sweden, Spain and Italy. Gold discoveries created an Australian market for foodstuffs, and food markets were also found in South America, Canada, Cuba, the British West Indies and Africa.

**The Civil War Era.**—The Civil War resulted in the almost complete destruction of the cotton-export trade and consequently reduced the agricultural exports during the period 1861–1865. It is remarkable, however, that western flour, grain and provisions were exported in larger quantities than during the golden era. Though thousands of farmers had flocked to the colors the crops of the northern states underwent an amazing increase. Machinery, women and border state immigrants replaced the absent farmers; vessels flying foreign flags largely replaced the sorely pressed American merchant fleet; and European crop failures caused an unusual foreign demand. England was forced to recognize that American foodstuffs as well as cotton had become an important international consideration. Leaf tobacco exports did not increase but were well maintained, and the aggregate value of all agricultural exports, other than cotton, advanced from less than \$68,500,000 in 1860 to \$130,800,000 in 1863. A portion of this increase represented a rise in

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<sup>2</sup> See U. S. Bureau of Statistics, *Exports of Manufactures—1790–1902*, Monthly Summary of Commerce and Finance, April, 1903, p. 3249; and U. S. Bureau of Foreign and Domestic Commerce, *Statistical Abstract* (1913), p. 638. Statistics disagree slightly in different sources.

prices, but the exports of flour, grain and provisions advanced in volume as well as in value.

**The Period 1865-1900.**—Though farm commodities had long been the mainstay of the country's export trade, the heyday of agricultural exports was reached during the seventies and eighties. Their upward course was subject to fluctuations but their total value gradually advanced from \$278,670,000 in 1866 to \$844,617,000 in 1900.

The growth in exports was the direct result of the westward expansion of agriculture and the vast increase in the production of the grains, live stock, cotton, and leaf tobacco. A great surplus was created which sought and found foreign markets, its exportation being stimulated by improvements in rail, lake and ocean transportation facilities, in the methods of international settlement and the establishment of accepted export trade methods, by the growth and westward migration of flour mills and meat-packing plants, by reduced freight rates and by a brisk demand in Great Britain, western Europe and to some extent in non-European markets.

The principal feature of the period 1865 to 1900 was the unprecedented increase in the shipment of breadstuffs which superseded cotton as the largest group of American exports. By 1880 wheat exports had increased to 180,000,000 and corn exports to 99,500,000 bushels and the total value of all exported breadstuffs to \$288,000,000 or \$76,500,000 in excess of the value of cotton exports. In the closing year of the century 186,097,000 bushels of wheat, 213,123,000 bushels of corn, and breadstuffs of all kinds valued at \$262,744,000 were shipped abroad. The greatly enhanced importance of wheat and flour exports is emphasized in the large proportion of the total crop which was shipped abroad. In 1860 but 9.2 per cent of the wheat crop was exported, but in 1870 the export ratio rose to 20.7 per cent, in 1880 to 40.2 per cent, and from then until the end of the century it fluctuated from 25 to 41½ per cent, closing with 34 per cent in 1900. The per cent of the corn crop exported to foreign markets has always been smaller, but it, too, rose from ½ of 1 per cent in 1860 to 6%

per cent in 1880 and to 10 $\frac{3}{4}$  per cent in 1900, the usual proportion since the early seventies varying from 2 to 5 per cent of the crop.

Cotton exports were close rivals of breadstuffs. They lagged for a time after the close of the war, but by 1880 they had increased to 4,453,000 bales and by 1900 to 6,807,000 valued at \$241,833,000. A relatively smaller proportion of the crop was exported than during 1846 to 1860, when from 71 to 86.8 per cent was annually shipped abroad, because domestic mills were gradually entering the cotton trade; but as late as 1900, 66.8 per cent of the crop was still being marketed in foreign countries.

The exports of meat and meat products which had also made a beginning before the Civil War, advanced rapidly from a value of \$35,000,000 in 1865 to \$113,769,000 in 1880 and to \$175,227,000 in 1900, and soon came to rank as the third group of American exports. In the closing year of the century the total exports of all provisions including dairy products, were valued at nearly \$184,500,000 and in addition the live-stock industry exported live animals, principally cattle, valued at \$43,585,000. Leaf tobacco exports had, moreover, increased to 315,750,000 pounds valued at \$27,600,000 and comprising nearly 39 per cent of the entire tobacco crop.

Agricultural commodities were the mainstay of the country's export trade throughout the nineteenth century. It is remarkable that until the later eighties, though many other industries were entering the export trade, from 75 to 84 per cent of the aggregate continued to spring from the farming industries. The agricultural proportion was somewhat lower during the remainder of the century, but remained above 70 per cent until 1895 and exceeded 61 per cent in 1900.

#### RECENT DEVELOPMENTS OF AGRICULTURAL EXPORTS

The total value of the farm products exported from the United States from the close of the nineteenth century until the years 1913 and 1914 underwent a further advance from \$844,617,000 in 1900 to \$1,123,000,000 in 1913, or nearly 33

per cent. Since agricultural export prices during this period advanced fully 30 per cent, it becomes evident that the real increase in volume was but slight. Agricultural exports indeed underwent developments which were in marked contrast with those of previous years:

1. Their dominant position in the country's export trade was seriously undermined. Prior to the outbreak in 1914 of the European War, which caused an unusual temporary exportation of foodstuffs, there was a steady decline in the relation between the agricultural and total export trade from 65.2 per cent in 1901 to 46.2 per cent in 1913.<sup>3</sup> This is in sharp contrast with the relative growth of the exports of manufactures and semimanufactures during the same period from 31.9 to 48.8 per cent. The relative shift from manufactures to farm products was due in part to the rise of a surplus output in various industries such as the iron and steel, agricultural implement, mineral oil, copper, lumber, cotton textile, leather, vehicle, chemical and rubber goods industries, and in part to the comparative decline in the country's foodstuffs.

2. The most pronounced development was the absolute decline in the value of food exports, in spite of rising prices, from nearly \$545,603,000 in 1900 to \$369,087,000 in 1910 and \$430,296,000 in 1914; and their relative decline from 39.8 per cent of the total export trade in 1900 to 18.6 per cent in 1914.<sup>4</sup> Wheat exports including flour, fell from a maximum of over 234,773,000 bushels in 1902 to 115,500,000 in 1914 and to a much lower point during various years of this period. Corn exports including cornmeal likewise declined from a maximum of 213,123,000 bushels in 1900 to 10,700,000 in 1914. The value of total breadstuffs exported during the first decade of the twentieth century fell from \$262,750,000 to \$133,593,000 and to fourth rank as an American export.<sup>5</sup> The exports of provisions, including meat products and dairy products, con-

<sup>3</sup> *U. S. Statistical Abstract* (1913), p. 638.

<sup>4</sup> Department of Commerce includes in these totals cottonseed oil, oilcake, wines, spirits and liquors, fish, etc., as well as the great agricultural crops.

<sup>5</sup> Their total value in 1914 was \$165,300,000.

tinued at a higher level but also declined from a value of \$184,500,000 in 1900 to \$130,633,000 in 1910 and \$146,250,000 in 1914. The number of cattle exported fell abruptly from over 397,000 in 1900 to 18,376 in 1914.

Not only did food exports decline relative to the total export trade of the United States, but they declined relative to the production of foodstuffs. Wheat exports, for example, fell from 34 per cent of the total crop in 1900 to 19½ per cent in 1913, and during the same period corn exports declined from 10½ per cent to 1¾ per cent of the corn crop.<sup>a</sup>

3. Contrary to the decline in food shipments the great agricultural exports other than foodstuffs continued to increase. These exports, of which cotton and leaf tobacco were most important, constitute raw materials for use in foreign industries and were promoted by the continued existence of a great surplus. Raw cotton regained its position as the king of exports. The volume of cotton exports sprang from 6,807,000 bales in 1900 to 10,675,000 in 1912 and 9,165,000 in 1914, and their value from \$241,833,000 in 1900 to nearly \$610,475,000 in 1914. Even though the American cotton textile industry grew rapidly the proportion of the total cotton crop shipped abroad continued to fluctuate from 63 to 72 per cent.

Leaf tobacco exports similarly advanced from 315,750,000 pounds in 1900 to 449,750,000 in 1914, and from a value of \$29,400,000 to nearly \$54,000,000. In the later years of this pre-war period an equivalent of over 40 per cent of the total leaf tobacco crop was shipped to foreign markets.

The position of agricultural products in the export trade of the United States during the European War and subsequently has fluctuated violently and probably shows less concerning future developments than is shown by the experience of the comparatively normal pre-war years 1900 to 1914. The value of all agricultural exports combined advanced from \$1,113,974,000 in 1914 to \$4,107,000,000 in 1919 and then declined to \$2,119,000,000 in 1921. The great advance and decline in value was due mainly to price fluctuations, but somewhat also to

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<sup>a</sup> Including flour and meal.



fluctuations in the volume of agricultural products shipped. The relative position of agricultural products in the export trade likewise fluctuated greatly. During the years 1916 to 1918 inclusive and in 1920 they comprised a smaller percentage of total exports (31.6 to 42.9 per cent) than had been the case in 1913 or 1914, while during the remaining war and post-war years, the agricultural export ratio was somewhat higher.<sup>7</sup> On the whole the ratio of agricultural exports to total exports continued to decline somewhat because the export boom was even greater in various manufacturing industries than in the agricultural industries.

Agricultural exports, however, continue to be of great importance. On the basis of value, of the first half dozen commodities exported from the United States in 1922, four are farm products—cotton, wheat, leaf tobacco and corn—and many other products grown on the farms or manufactured entirely of farm products continue to rank high in the country's export trade. The more important include meat products, wheat flour, sugar, rye, canned fruit, condensed, evaporated and powdered milk, oats, rice, barley, raisins, fresh and dried fruits, cotton seed products, vegetables, etc.<sup>8</sup>

During 1922 after the prices of most farm products had been thoroughly deflated and the value of exports had declined greatly from the high level reached in 1919, the volume or quantity of many agricultural exported products was substantially above that exported in 1913–1914. Prices were so low that many producers were in difficulty, but a large part of the heavy surplus continued to flow to foreign markets.<sup>9</sup>

The importance of the export trade to the farmers of the United States is not limited to the exportation of the above-mentioned products grown on the farms or manufactured entirely of farm products. Many finished manufactures regularly ex-

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<sup>7</sup> It was 54.3 per cent in 1915, 53 per cent in 1919, and 48.4 per cent in 1921.

<sup>8</sup> See Chamber of Commerce of the United States, *Our World Trade in 1922*, p. 10. U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce, Department of Commerce, *Foreign Trade of the United States*, 1922, p. 46.

<sup>9</sup> *Ibid.*, pp. 14 and 48 respectively.

ported from the United States consist primarily of farm products. Exports of this kind include manufactured products such as cotton goods, woolen goods and tobacco products. Indeed, the interest of the farmer should properly include the exportation of a large number of manufactured products which do not consist of farm products, because the industrial growth incident to increased exports of general manufactures will enlarge the domestic markets for farm products.

#### FOREIGN MARKETS FOR AGRICULTURAL EXPORTS

**European Markets.**—The foreign markets for American farm products have long been confined primarily to Europe. The fall in the relative position of Europe in the total export trade of the United States from 74.6 per cent in 1900 to 59.9 per cent in 1913 and 62.8 per cent in 1914 was due chiefly to the shift from agricultural products to manufactures, less than 45 per cent of the latter finding a market in the Old World even including the agricultural countries of eastern Europe. The position of Europe as the dominant foreign market for American farm products declined somewhat during the pre-war period 1900 to 1914, but it absorbed from 65 to 90 per cent of the annual shipment of American raw foodstuffs, from 72 to 83 per cent of the prepared food exports, and usually about 92 or 93 per cent and 80 or 85 per cent respectively of the exports of raw cotton and leaf tobacco. Europe has since then continued to provide the controlling foreign market for the principal agricultural staples.

A sharp contrast may be drawn between the countries of eastern and western Europe. The former produce a surplus of foodstuffs and their cotton textile industry although progressing has thus far been of secondary importance, while the latter do not produce sufficient food to maintain their population, and have developed a huge textile industry which depends upon imported cotton.

Great Britain has long been the leading foreign market for American foodstuffs, for as the United States Department of Agriculture reports, the United Kingdom produces but 27 per

cent of her edible grains, 53 per cent of her meats, 62 per cent of her dairy products and but 53 per cent of her aggregate food requirements.<sup>10</sup> Great Britain, moreover, has adhered to the free trade policy so far as her agricultural imports are concerned and has few inspection regulations which restrict food importation.

Germany has also been a great market for American food exports but is more restricted, for although Germany is also an industrial country and has a larger population than Great Britain the German Government has persistently encouraged the production of domestic foodstuffs wherever possible. Before the war Germany produced about 82 per cent of her edible grains, 93 per cent of her meats, 92 per cent of her dairy products and 88 per cent of her aggregate food requirements. Not only did Germany produce comparatively large quantities of grain, flour and provisions which in the absence of intensive farming would be imported from the United States and other surplus countries, but also a large potato crop which further restricted the need for food imports.<sup>11</sup> Germany, moreover, levied protective tariff duties on most food imports and enforced inspection regulations which restricted the importation of cattle and fresh meats. Wheat, flour, cured pork and beef products, lard, oleo and other American packing-house products, however, were regularly shipped to Germany before the outbreak of the European War. The German market has again become important but it has not recovered its pre-war position in the agricultural export trade.

France, Italy, the Netherlands, Belgium and all the remaining countries of western Europe are also markets for American foodstuffs, for their domestic output of food is insufficient. The French market, however, is normally even more restricted than the German because France produces about 93 per cent of the edible grains needed by her population, 98 per cent of her meats, more dairy products than are needed, and 93 per cent

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<sup>10</sup> Bureau of Crop Estimates, *The Agricultural Outlook*, Nov. 23, 1914, pp. 20-22.

<sup>11</sup> U. S. Bureau of Foreign and Domestic Commerce, *Utilization of Potatoes in Europe* (1914).

of her total food requirements.<sup>12</sup> Holland and Belgium import relatively large quantities both because their lack of sufficient domestic foods is greater than in either France or Germany and because a portion of the food shipments to Antwerp, Rotterdam and Amsterdam are usually reshipped to central European countries.

The market for American foods in Eastern Europe is small because most of the countries in that section of Europe—particularly Russia, Roumania and Bulgaria—normally produce a surplus which they export to Western Europe. The situation in Russia has been so abnormal since the revolution that the large surplus which was formerly available for exportation to Great Britain and western European countries has disappeared and it has been necessary at times to import foodstuffs. The extensive farming lands and agricultural population of Russia, and the available, nearby markets should, however, again result in a large surplus of farm products as soon as the political and economic problems confronting Russia are solved.

Great Britain is also the principal foreign market for American raw cotton and leaf tobacco exports, taking nearly 38 per cent of each in 1914. Other important European markets for American cotton are Germany, France, Italy, Spain and Belgium, which together import more cotton from the United States than Great Britain. This is also true in the case of leaf tobacco, Italy, France, Germany, Holland, Belgium and Spain being tobacco markets of long-standing importance.

**Non-European Markets.**—Though the agricultural exports are dependent chiefly upon Europe, numerous non-European markets are of appreciable importance. During the pre-war period 1900 to 1914 from 10 to 35 per cent of the food exports in crude condition, and from 17 to 28 per cent of the prepared food exports were shipped to non-European markets. Grains and flour were shipped to Canada, the Central American republics, Panama, Mexico, Cuba and other West Indian markets, Brazil, Chili, Peru, the northern countries of South America, Newfoundland and Labrador, Japan, the Philippines and

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<sup>12</sup> Pre-war production statistics.

**South Africa.** Limited quantities of raw cotton were similarly exported to Japan, Canada and Mexico; and leaf tobacco to Australasia, China, Canada, South America and Africa. With the exception of industrial Japan, the importance of these countries in the American export trade, however, was principally as markets for nonagricultural products.

Since then the importance of some of these non-European markets for agricultural products has increased. The nearby markets of Canada, Cuba and Mexico have in recent years become important for products such as eggs, butter, cheese and meat products. Substantial quantities of corn have been shipped to Canada and Mexico; cotton to Japan, China and Canada; fruits of various kinds to Canada; leaf tobacco to Australia, China and Canada, and condensed milk to Cuba.

#### AGRICULTURAL EXPORT TRADE INFLUENCES

**Favorable Influences.**—The forces which influence the exportation of American farm products are both favorable and unfavorable. Those which tend to maintain or increase the agricultural exports of the United States so far as possible are principally the following:

1. The normal shortage of food production in Great Britain and western Europe obliges those countries to import varying proportions of their grain, flour, meat products and in some instances dairy products. Their population is dense, their industries are mainly nonagricultural, and their outside sources other than the United States—although increasing in importance—have thus far been insufficient. The needs of the non-European countries mentioned above (page 505) are less pressing, but they too may be expected to continue the importation of American foodstuffs in limited quantities.

2. The cotton mills of Great Britain, Continental Europe, and to a less extent those of Japan and Canada, guarantee a large foreign market for American cotton, for the United States produces over 60 per cent of the world's commercial cotton crop and a much larger proportion of the varieties best suited to the manufacture of the finer grades of yarn and cloth.

3. The foreign demand for American leaf tobacco, especially in Great Britain, Italy, France, Germany, Holland, Belgium, Spain, Canada and Australasia, stimulates the exportation of the huge surplus of heavy shipping leaf which the domestic market is unable to absorb.

4. The United States still produces a surplus of cotton, leaf tobacco, wheat, corn, flour and provisions which for many years has regularly sought foreign markets. The surplus of grain, flour and meats declined from the close of the nineteenth century until the war demand encouraged increased production and it may again decline in the future; and the surplus of cotton is smaller than it was formerly, but so long as it cannot be sold in the domestic market without depressing the price a portion of the crops and output of meat products will be sold abroad. The more recent surplus of dairy products and fruits of various kinds also seeks foreign markets wherever they may be found.

5. The exportation of farm products to European markets is favored by the well-organized condition of the trade mechanism necessary for international selling, shipping and financing. Great Britain and western Europe as well as the United States have organized exchanges, recognized markets, banks, export and import concerns, and improved railroad, steamship, warehouse, elevator and port facilities.

**Unfavorable Influences.**—The agricultural export trade is also confronted by serious obstacles.

1. During the normal pre-war period from 1900 to 1914 the greatly increased home needs for grain, flour, live stock and meat products coupled with a relatively slow increase, and in some instances a decline in food production, was chiefly responsible for the decrease in food exports which occurred at that time. Cotton and leaf tobacco exports maintained an important relation to their respective crops, and the growing textile and tobacco manufacturing industries of the United States made it seem probable that a larger proportion of these crops would in the not distant future be retained for home consumption. Since then the pre-war tendency of a shrinkage in the surplus of the agricultural food has been checked, and larger quantities

have been exported, but the low farm prices which have prevailed since 1920 are beginning to have an effect on production. The future of the export trade in grain, flour, live stock and meat products is uncertain, and cotton exports and the yearly cotton crop have declined at least temporarily for reasons stated elsewhere.<sup>13</sup>

2. An increasing number of additional outside sources, from which Great Britain and Western Europe import foodstuffs, have arisen in recent years. Before the war Russia, Roumania, Bulgaria and Hungary, Argentina, Australia, India and Canada had become important grain and flour exporters, and Argentina, Brazil, Uruguay, New Zealand, Australia, Russia and India had become exporters of live stock and meat products. Russia and other eastern European countries are not serious competitors at the present time, but may again become a trade factor in the future, and the remaining sources mentioned continue to export their surpluses. The cotton and leaf tobacco export trades of the United States have been less affected by the rise of other outside sources, but appreciable quantities of cotton are being exported from British India, Egypt and other tropical colonies of the European powers; and of leaf tobacco from the Dutch East Indies, Turkey, the West Indies, the Philippines, British India, Brazil, Paraguay and Algeria, and formerly also from Russia and what then comprised Austria-Hungary.

3. The policy of intensive agriculture with the resultant heavy domestic production of live stock, grain, flour, dairy products and vegetables in Germany, France, Denmark, Holland, Belgium and some of the smaller countries of central and western Europe tends to restrict the exports of American foodstuffs by reducing the food imports of these countries to a minimum.

4. The high tariff duties levied on imported wheat, flour, live stock and numerous meat products in all the food-importing countries of western Europe except Great Britain, Denmark, Holland and Belgium tend to restrict somewhat the exportation of these products from the United States, and in some mar-

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<sup>13</sup> See pp. 168 to 173.

kets the import duties are supplemented by restrictive inspection regulations

5. Foreign exchange rates are at present unfavorable to the exportation of agricultural or other products from the United States to the principal European markets. Although they have not made it impossible to export needed agricultural products they have hampered American exports. The exchange rates on some of the countries of Europe, particularly those of Great Britain have recovered substantially from the lowest level, but those of the continental European countries who took part in the war may continue to be an obstacle for some time. They have been influenced not only by the huge war and post-war excess of American exports over imports which prevailed until very recently, but also by the uncertain political and economic conditions obtaining in many of the continental countries.

During the European War the shortage of vessel tonnage, high ocean freight rates, and the closing of trade routes to some of the continental markets prevented the free movement of the agricultural as well as other exports of the United States, but this situation was wholly abnormal. In times of peace, ocean freights and services to the great European markets are usually satisfactory. The importance of ocean transportation as an obstacle to the free development of the American export trade has normally been confined to the trade with non-European countries and has applied more largely to the shipment of manufactures than to agricultural exports. The merchant marine acquired by the United States has done much to provide improved services in the non-European trades.

### THE AGRICULTURAL IMPORTS

The early trade in West India sugar and molasses, south European wines and spirits, and tea, coffee and spices imported from China, India, the East and West Indies and South America constitutes an interesting and important chapter in the history of American commerce and extends back to the early colonial



days.<sup>14</sup> For many years, however, the agricultural imports as a whole were greatly exceeded by the imports of manufactures. The country was agricultural and needed to import the bulk of its manufactures from abroad. As late as the period 1846 to 1860, long after manufacturing industries had begun to develop in the United States, the agricultural imports comprised but 28 to 39 per cent of the entire import trade as compared with imports of manufactures ranging from 56½ to 71 per cent of the total.

The export and import trades in agricultural commodities after the Civil War were similar in that both increased rapidly. They differed, however, in that from 1900 to 1914 the former declined relative to exported manufactures and the total export trade, while the imports of agricultural products steadily maintained the relative level which they attained during the seventies and eighties. The total value of all agricultural imports advanced from \$129,816,000 in 1860 to \$191,559,000 in 1870, \$314,617,000 in 1880, \$420,139,000 in 1900 and to over \$924,000,000 in 1914. In 1860 they comprised 36.7 per cent of the value of the country's entire import trade, in 1870 43.9 per cent, in 1880 47.1 per cent, in 1900 49.4 per cent and from then until 1914 they varied from 43.7 to 49.6 per cent of the total. Meanwhile the imports of manufactures and semimanufactures also advanced to a value of \$757,500,000 in 1913 but declined relatively to less than 42 per cent of the entire import trade.

After 1914 the value of agricultural imports increased to a maximum of \$3,011,000,000 in 1920 and then declined abruptly to \$1,249,000,000 in 1921. Much of the violent fluctuation was due to the rise and fall of prices, but the imports of many agricultural products also increased very substantially in volume from 1916 to 1920 and then declined somewhat with the coming of the industrial and commercial depression. In 1922 began another increase both in the value and volume of imported agricultural products. The percentage of agricultural imports to the total import trade advanced after 1913 from 48.8 per cent in 1914 to 61.3 per cent in 1919 and 57 per cent in 1920 and

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<sup>14</sup> For details of early trade history see Emory R. Johnson, *History of the Domestic and Foreign Commerce of the United States*, Vol. II.

then declined somewhat, but continued to hover at nearly 50 per cent.

Agricultural imports include three principal groups of commodities.<sup>15</sup>

1. The largest and most rapidly increasing group consists of raw material of agricultural origin to be used in the manufacturing industries of the United States. In the calendar year 1922, hides and skins valued at \$107,045,000 were imported from Argentina, Uruguay, Brazil, Canada, Mexico, Australasia and New Zealand, the East Indies and British India, and from a wide range of other countries including even Great Britain, France and other western European countries. Over 376,700,000 pounds of wool and hair valued at \$86,554,000 dollars were imported in the same year, principally from England, acting as a broker nation for wools raised in many other parts of the world, and from Argentina and Uruguay, Australasia, China, Canada and South Africa. Raw silk valued at \$365,787,000 was imported mainly from Japan, China, Italy and France; hemp, flax, jute, sisal grass and other raw fibers valued at \$31,704,000 chiefly from Mexico, the East Indies and British India, the Philippines, and England again acting as a broker nation; leaf tobacco valued at \$65,990,000 chiefly from Cuba, Turkey and Holland; and long-staple cotton, principally Egyptian, valued at \$47,682,000.

2. The second group consists of crude foodstuffs and food animals, the value of which has since 1900 varied from 9½ to 14 per cent of the total import trade. It includes coffee, which is imported largely from Brazil, Colombia, Venezuela, Central America, Mexico, the East and West Indies and indirectly from various European countries; tea from Japan, China, the East Indies, and indirectly from England; and crude cocoa from the West Indies, Brazil, Ecuador, and from England, Portugal and other European transshipment countries. It also includes a large and increasing volume of fruits and nuts which are imported from the West Indies, Central and South America, Mexico, Italy, France, Spain and a wide range of additional trop-

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<sup>15</sup> *U. S. Statistical Abstract* (1913), p. 638.

ical and subtropical countries, and it includes wheat imports which are received mainly from Canada. The value of all food stuffs imported in the raw condition, including a limited number of food animals in 1922 was \$329,817,000.

3. A third group of agricultural imports includes the various manufactured or partially prepared foods. Sugar, which, next to raw silk is the largest individual import of the entire foreign trade, was imported to the value of \$251,905,000 chiefly from Cuba, the Philippines, the Dutch East Indies and various Central and South American countries. The Department of Commerce also includes in this group beverages, breadstuffs such as rice and wheat flour, macaroni and tapioca, edible vegetable oils, prepared spices and molasses. The total annual value of all imports in this group has since the year 1900 ranged from \$92,283,000 to \$1,113,825,000 and in 1922 aggregated \$388,287,000. It comprised from 10½ to 23½ per cent of the entire import trade. The relative position of food imports—crude as well as prepared—has in recent years been lower than during the seventies and eighties, while that of raw materials of agricultural origin has steadily risen.

The agricultural products comprising these three groups have become the mainstay of the import trade. The volume or quantity of them imported in 1922 in most instances greatly exceeded the quantity imported before the war.<sup>16</sup>

**Effect of Agricultural Imports on American Farmers.**—Though the volume of the imports of agricultural commodities is astoundingly large their effect upon many of the principal farm crops and allied industries of the United States—grain, flour, cotton, live stock, meat products, leaf tobacco, dairy products, fruits and vegetables—has for various reasons never been serious.

1. Most of the imported commodities of this kind are not directly competitive and their total volume has thus far been relatively small. The imports of foreign grain, grain products, meats and live stock for food purposes, were until very recent

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<sup>16</sup> Chamber of Commerce of U. S., *Our World Trade in 1922*, pp. 21, 22.  
U. S. Bureau of Foreign and Domestic Commerce, *Foreign Trade of the U. S.*, 1922, p. 50.

years almost unappreciable. Substantial quantities of Canadian wheat have been imported since 1917, little attention however being paid to them while prices were high. Certain dairy products, mainly of a specialized character, have been imported for some years, but their effect upon the vast output of the domestic dairy industries has been restricted by their relatively small volume. Foreign cotton and leaf tobacco imports have been rapidly increasing but are largely noncompetitive, the long-staple cotton imported from Egypt being in competition with but a small fraction of the American cotton crop, which consists mainly of short-staple varieties; and the imports of Cuban, Turkish and other special varieties of leaf tobacco come into competition with but a small part of the country's vast crop of domestic leaf. Much of the foreign cotton and leaf tobacco is mixed with the domestic product to obtain desired finished wares and thereby increases rather than restricts the demand for American upland cotton and leaf tobacco. A wide range of fruits and nuts is imported, but as was described in an earlier chapter a large proportion consists of tropical and sub-tropical varieties which are not produced on a large scale in the United States.

2. The effects of the agricultural imports of this kind before the war, were in some instances further minimized by the import duties which were imposed until the tariff law of October, 1913, became effective and which remained applicable to leaf tobacco, prepared dairy products and certain fruits. With certain exceptions farm products were again granted protective duties in the emergency tariff act of 1921 and the tariff act of 1922. Although the price declines which had occurred were not primarily due to the influx of foreign products, increased imports of wheat, wheat flour, wool and various other farm products became somewhat of a price factor and many were removed from the customs free-list.

3. Some of the principal imported agricultural commodities are even less competitive owing to the almost complete lack of production in the United States. Such for example are coffee, cocoa, tea and hemp, sisal grass and similar fibers. The latter

are produced in the United States on a moderate scale but the imported product has been essential to the twine and cordage manufacturing industries.

Competition with domestic producers in the past was confined mainly to imported wool, hides and skins, sugar, wines and spirits. Foreign wool was imported for use in the American woolen industries even though protective duties were applicable, because domestic wool production was insufficient and in part because a portion of the wool imports were noncompetitive.<sup>17</sup> The inadequacy of home production, likewise, made possible the heavy importation of hides and skins, and foreign cane sugar has long been in direct competition with domestic cane and sugar beet production. Foreign wines and spirits were also in competition with domestic liquors and with the raw farm products from which they are made, but the special demand upon which they depended caused them to be imported, although they were restricted by heavy import duties.

The agricultural import trade as a whole may be expected to increase in the future. The demand for many of the imported foods, particularly those of tropical and subtropical growth, is steadily advancing, and the expansion of the woolen and cotton textile, twine, cordage, and leather industries points to the further importation of foreign raw materials of agricultural origin. Importing, shipping and financial methods are being improved, trade relations of the United States with the countries in which most of the agricultural imports originate are improving, and their output is with few exceptions increasing at least as rapidly as market conditions warrant. Agricultural imports, moreover, are highly important as a basis for the export trade of the United States. It is almost an axiom that a nation in order to export heavily must also import and that a reasonable relationship between exports and imports of commodities must be maintained. It so happens that a large part of the agricultural imports are obtained from those sections of the world, largely non-European, where the most promising foreign markets for American manufactures are located. In

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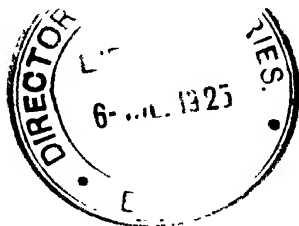
<sup>17</sup> See Chap. XI, p. 262.

those regions particularly, the imports of agricultural products have an important bearing upon exchange rates, upon the ability of American exporters to sell manufactures in competition with their foreign rivals, and upon the ability of steamship operators to obtain cargoes. The continued exportation of American farm products to Europe will also depend in part upon increased imports, about one half of which have recently consisted of foreign agricultural products. The maintenance of a workable relationship between exports and imports affects not only the trade of the United States with particular countries but with the world as a whole.

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